**Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora**

**and**

**Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds**

# PRIORITISED ACTION FRAMEWORK (PAF)

# FOR NATURA 2000

# THE NETHERLANDS

**For the EU Multiannual Financing Period 2021-2027**

**FINAL DRAFT VERSION JULY 2021**

**under Article 8 of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive)**


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*"Let me take this opportunity to remind you of the importance of the PAFs as strategic planning tools. They set the financing priorities for EU investment in nature for the period 2021-2027 with a view to uptake of EU funds. On the basis of updated costings of management of the Natura 2000 network they should underpin the preparation of EU funding programmes post-2020, including the CAP Strategic Plans and Eco-schemes, cohesion, regional, maritime and fisheries programmes. In this respect, I would like to stress that according to the Commission proposal for the European Regional Development Fund (ERDF) regulation, funding from objective 2(7) related to biodiversity is conditional upon submitting a complete PAF of sufficient quality. The fulfilment of this so-called 'enabling condition' is necessary to ensure the timely approval of the ERDF programme for each of your countries. PAFs will also serve as relevant plans for the purpose of strategic nature projects (SNAPs), which will replace nature integrated projects in the next LIFE Programme starting in 2021. In order to avoid any delay in LIFE implementation and optimise use of this fund, PAFs need to be in place well before the next EU funding cycle."*

*(Mr. Humberto Delgado Rosa (DG Environment, Director Natural Capital) on the importance of the PAF, speech of 19 June 2019).*

# A. Introduction

## A.1 General introduction

Prioritised action frameworks (PAFs) are strategic multiannual planning tools, aimed at providing a comprehensive overview of the measures that are needed to implement the EU-wide Natura 2000 network and its associated green infrastructure, specifying the financing needs for these measures and linking them to the corresponding EU funding programmes. In line with the objectives of the EU Habitats Directive[1] on which the Natura 2000 network is based, the measures to be identified in the PAFs shall mainly be designed "*to maintain and restore, at a favourable conservation status, natural habitats and species of EU importance, whilst taking account of economic, social and cultural requirements and regional and local characteristics*" (Art. 2 Habitats Directive).

The legal basis for the PAF is Article 8 (1) of the Habitats Directive[2], which requires Member States to send, as appropriate, to the Commission their estimates relating to the European Union co-financing which they consider necessary to meet their following obligations in relation to Natura 2000:

- *to establish the necessary conservation measures involving, if need be, appropriate management plans specifically designed for the sites or integrated into other development plans,*
- *to establish appropriate statutory, administrative or contractual measures which correspond to the ecological requirements of the natural habitat types in Annex I and the species in Annex II present on the sites.*

Prioritised action frameworks shall therefore focus on the identification of those financing needs and priorities that are directly linked to the specific conservation measures established for Natura 2000 sites, in view of achieving the site-level conservation objectives for those species and habitat types for which the sites have been designated (as required by Article 6(1) of the Habitats Directive). Given that the Natura 2000 network also includes the Special Protection Areas (SPAs) designated pursuant to the EU Birds Directive 2009/147/EEC[3], the financing needs and prioritized measures associated with bird species in SPAs are therefore also considered here.

Member States are invited to also present in their PAFs additional measures and their financing needs related to wider green infrastructure (GI)[4]. Such green infrastructure measures are to be included in the PAF where they contribute to the ecological coherence of the Natura 2000 network, including in a cross-border context, and to the objective of maintaining or restoring favourable conservation status of the targeted species and habitats.

In its Special Report N° 1/2017 on Natura 2000[5] the European Court of Auditors concluded that the first completed PAFs (for the MFF period 2014-2020) did not present a reliable picture of the actual costs of the Natura 2000 network. The report therefore highlighted the need for updating the PAF format and providing further guidance for improving the quality of information that Member States provide in their PAFs. The recent

[1] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01992L0043-20130701

[2] Article 8 (1): "In parallel with their proposals for sites eligible for designation as special areas of conservation, hosting priority natural habitat types and/or priority species, the Member States shall send, as appropriate, to the Commission their estimates relating to the Community co- financing which they consider necessary to allow them to meet their obligations pursuant to Article 6 (1)."

[3] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32009L0147

[4] Green infrastructure is defined as 'a strategically planned network of natural and semi-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services'.

[5] Special Report No 1/2017: More efforts needed to implement the Natura 2000 network to its full potential https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=40768

EU Action plan for nature, people and the economy[6] commits to this process, with a view to ensuring that Member States provide more reliable and harmonised estimates of their financing needs for Natura 2000.

In its conclusions on this action plan[7], the Council of the European Union recognises the need for further improving the multiannual financial planning for investments in nature and agrees that there is a need to update and improve the PAFs. The importance of better forecasting the financing needs for Natura 2000 ahead of the next EU Multiannual Financial Framework is also recognised in a resolution by the European Parliament[8].

## A.2 Structure of the current PAF format

The current PAF format is designed to provide reliable information about the priority Natura 2000-related financing needs, with a view to their incorporation in the relevant EU funding instruments under the next Multiannual Financial Framework (MFF) 2021-2027. To this aim, the PAF requires a level of breakdown of financing needs that would allow for an effective allocation of the Natura 2000 funding under the relevant EU funds for the MFF 2021-2027. With a view to that goal, the PAF also takes into consideration the experience that EU Member States and regions have gained so far with the MFF 2014-2020.

An essential component of the current PAF format is the required breakdown of the Natura 2000- and green infrastructure-related conservation and restoration measures per broad ecosystem category. The proposed ecosystem typology of 8 classes is very largely based on the MAES typology, which was established as a conceptual basis for an EU wide ecosystem assessment[9]. A comprehensive database allocating individual species and habitat types of EU importance to the MAES ecosystems is available for download from the European Environment Agency website[10]. It is recommended that the allocation of measures and costs to ecosystem types should largely follow this typology.

The presentation of prioritized measures and costs of the current PAF requires a distinction between running costs and one-off expenditure. Whereas running costs are typically associated with recurring measures that need to be continued in the long term (f. ex. staff costs for site management, annual payments to farmers for agri-environmental measures on grasslands, etc.), one-off expenditures are typically related to non-recurring actions such as habitat restoration projects, large infrastructural investments, purchase of durable goods, etc. The correct allocation of costs to either category ("running" versus "one-off") will be highly relevant for a correct allocation of measures under different EU funds.

Finally, priority measures under this PAF will not only contribute to the specific objectives of the EU nature directives, but will also provide important socio-economic and ecosystem service benefits to the society. Examples of benefits may include climate mitigation and adaptation, or other ecosystem services such as those related to tourism and culture. The Commission has already provided an overview of ecosystem services benefits related to Natura 2000.[11]

This aspect should be emphasized where possible, with a view to promote and communicate the wide societal benefits of funding nature and biodiversity.

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[6] COM(2017) 198 final: An Action Plan for nature, people and the economy http://ec.europa.eu/environment/nature/legislation/fitness_check/action_plan/communication_en.pdf

[7] http://www.consilium.europa.eu/en/press/press-releases/2017/06/19/conclusions-eu-action-plan-nature/

[8] European Parliament resolution of 15 November 2017 on an Action Plan for nature, people and the economy (2017/2819(RSP)) http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2017-0441

[9] https://biodiversity.europa.eu/maes

[10] Linkages of species and habitat types to MAES ecosystems https://www.eea.europa.eu/data-and-maps/data/linkages-of-species-and-habitat#tab-european-data

[11] http://ec.europa.eu/environment/nature/natura2000/financing/

# A.3 Introduction PAF Netherlands

## A. 3.1. Situation in the Netherlands

**Administrative set-up and organisation of Natura 2000 management**

Responsibility for drawing up the Natura 2000 management plans is determined by how ownership is distributed (and who the largest management authority is) in the sites. If the majority of the land in the site is owned by the central government than the central government takes the lead and bears primary responsibility for drawing up the management plan. If the majority of the land is privately owned than the provincial authority takes the lead and thus bears primary responsibility for drawing up the management plan. The Nature Conservation Act 1998 requires a management plan to be drawn up for each Natura 2000 site[12]. Management plans are drawn up in close consultation with owners, users and other government bodies involved, in particular municipal authorities, water boards and provincial authorities. In most cases the provincial authority takes the initiative to draw up the management plan, in other cases central government.

The competent authority (the ministries and provincial authorities concerned) establishes the management plans. The establishment of a management plan is a government (political) decision, which is subject to the General Administrative Law Act (AwB), as are the designation decisions. Before the management plan can be established a detailed site process takes place, in which all those directly involved (management authorities, users, local residents, municipal authorities, nature conservation organizations and water boards, etc.) are consulted.

The management plan remains in force for six years. Towards the end of this period it is reviewed by the competent authority, which assesses whether the realized measures led to the desired results. Depending on the results of this review, the validity period of the management plan may be extended by another six years. Or a new management plan, containing new measures, may be drawn up.

The management plan sets out the natural assets and the ecological prerequisites for meeting and/or maintaining the site-specific conservation objectives. It also sets out the measures required to ensure that the objectives are met sustainably, stating at what locations and within what time limit they must be implemented, including monitoring and funding. The management plan briefly sets out what funds and grants may be used to fund the measures. It also gives an overview of the activities currently taking place in and around the Natura 2000 site and how they relate to the conservation objectives. If activities are going on that have a negative effect on meeting the conservation objectives, the plan sets out measures to minimize these effects. In the case of future activities that could have a negative effect on meeting the site-specific conservation objectives the licensing procedure under the Nature Conservation Act 1998 must be followed. The management plan provides a framework for nature policy in the Natura 2000 site and thus lays down the criteria for whether the Act has been correctly applied.

*Administrative set-up and organisation of Natura 2000 management*
At the national level, the main organisational body responsible for Natura 2000 management is the Directorate Nature of the Ministry of Agriculture, Nature and Food Quality led by Mr. Donné Slangen. More in particular, the dedicated Team Natura 2000 that has been installed within this directorate is responsible for policy development, implementation and overall management of BHD and N2000 policy related issues. The management of the Natura 2000 areas in the Netherlands including designation procedures and the cycle of establishing and implementing the management plans for each area is taking place at the level of the provinces.

*National/regional bodies involved in elaboration of the NL PAF*
The Netherland's PAF has been developed under coordination of the Directorate Nature of the Ministry of Agriculture, Nature and Food Quality, in close cooperation with the provinces and other governmental bodies

[12] https://www.natura2000.nl/procedure/beheerplannen-voor-natura-2000-gebieden

involved in the implementation and management of Natura 2000, notably Staatsbosbeheer, the Ministry of Infrastructure and Nature Management (responsible for a number of wet N2000 areas) and the Ministry of Defence (owner of two N2000 areas). Responsible policy makers of the provinces and these ministries have been directly involved in acquiring the information required for the underlying PAF as well as in the process of setting priorities and formulating concrete actions for the coming planning period.

*Stakeholder consultation processes related to elaboration of the PAF, and their results*
As a part of establishing the current PAF, relevant NGOs including those holding ownership and/or conducting daily management of N2000-areas (such as Natuurmonumenten) have been consulted, have provided information on the current status with regard to their areas and have expressed their views and priorities for the coming planning period. Apart from the consultation process that was organised as part of the development of the Prioritised Action Framework, a 'quick scan Natura 2000' was developed for the process of updating the Natura 2000 target system to acquire further insight in the extent to which objectives can be met, for the period up to 2030 as well as the longer run - the period up to 2050. This quick scan furthermore yielded information on the main perceived barriers in case objectives were deemed to be not achievable and the possibility to achieve additional benefits for N2000 development. This quick scan was conceived in close cooperation with responsible policy makers at the provinces, who have in turn consulted NGOs and were relevant other stakeholders.

*Nature Network Netherlands*
As is the case for the implementation of Natura 2000, the provinces in the Netherlands are also responsible for green infrastructure (formerly the EHS, Ecologische Hoofdstructuur, currently NNN: Nature Network Netherlands). The arrangements regarding the Nature Network Netherlands are laid down in the 'Natuurpact', an agreement between the national government and the provinces. The Natuurpact inter alia comprises the development of 80.000 ha nature by 2027 to reenforce the Nature Network Netherlands.

**Current situation with regard to Natura 2000 implementation**

The Netherlands has designated Natura 2000 sites for 52 habitat types, 98 bird species and 80 other species (37 species of Annex II). See Table A-1, Table A-2, Table A-3 and Table A-4.

A large part of the Dutch Natura 2000 sites exists of water. On land and in water different habitat types and species occur, for this reason we present the habitat types and species in the large waters in some Figure s and Table s also separate from the overall summary.

The Dutch lists of habitat types of Annex I and species of Annex II of the Habitats Directive[13] are presented in Annex 1 and Annex 2. The Dutch lists of birds of Annex I and of migratory birds are presented in Annex 3. The habitat types and species of the Large Waters are presented in **bold**.

*Table A-1. This Table gives the number of habitat types (Annex I) and species (Annex II) of the Habitats Directive by the biogeographical region in Netherlands. Source: NL art. 17 report (2019). See also Annex 1 and 2.*
** There is one difference in comparison to the numbers mentioned in the NL 2007-2012 article 17 report (2019). In 2019 habitat type 6210 (Semi-natural dry grasslands and scrubland facies on calcareous substrates) was unintentionally not counted as a priority habitat type. This changes the number of priority habitat types in The Netherlands from 11 to 12.*

[13] The Habitats Directive, adopted in 1992, covers around 1000 other rare, threatened or endemic species of wild animals and plants and some 230 habitat types. These are collectively referred to as habitat types and species of Community interest. The strategic objective of the Habitats Directive is 'to maintain or restore natural habitats and species of Community interest at favourable conservation status, taking into account economic, social and cultural requirements and regional and local characteristics'.

| Region | Habitats Annex I | | Species Annex II | |
|---|---|---|---|---|
| | *Non-priority* | *Priority* | *Non-priority* | *Priority* |
| Atlantic | 35 | 12* | 32 | 2 |
| Atlantic marine | 5 | 0 | 3 | 0 |
| Total | 40 | 12 | 35 | 2 |
| | **52** | | **37** | |

*Table A-2. This Table gives the number of habitat types (Annex I) and species (Annex II) of the Habitats Directive in the large waters in the Netherlands. Source: NL art. 17 report (2019).*

| Region | Habitats Annex I | | Species Annex II | |
|---|---|---|---|---|
| | *Non-priority* | *Priority* | *Non-priority* | *Priority* |
| Atlantic | 16 | 3 | 15 | 1 |
| Atlantic marine | 5 | 0 | 3 | 0 |
| Total | 21 | 3 | 18 | 1 |
| | **24** | | **19** | |

*Table A-3. This Table gives the number of bird species of the Birds Directive in the Netherlands. Source: NL art. 12 report (2019). See also Annex 3.*

| Birds Annex I (Art. 4.1) | Migratory Birds (Art. 4.2) |
|---|---|
| 46 | 52 |

*Table A-4. This Table gives the number of bird species of the Birds Directive by the biogeographical region in the Netherlands for the large waters. Source: NL art. 12 report (2019).*

| Birds Annex I (Art. 4.1) | Migratory Birds (Art. 4.2) |
|---|---|
| 38 | 47 |

## A.3.2. Number and area of Natura 2000 sites

In the Netherlands 139 sites are designated under the Habitats Directive (SCIs/SACs) and 77 under the Birds Directive sites (SPAs), together making 161 Natura 2000 sites. Of these, 19 SCIs and 19 SPAs fall into the category of Large Waters, together comprising 24 Natura 2000 sites. Annex 4 gives an overview of the Natura 2000 sites; the large waters are presented in **bold**. Two SCIs still have to be designated under national law. One site is a new site for the Netherlands (2018), which formerly lay in Belgium ("Maas bij Eijsden"). For the other site (Krammer-Volkerak) it still has to be decided whether the system will be freshwater or salty, which means that the site-specific conservation objectives for this site cannot be determined at present. For the same reason two SPAs (Krammer-Volkerak and Zoommeer) are not designated as Natura 2000 site yet. Information on the Natura 2000 sites in the Netherlands can be found at http://www.natura2000.nl/gebieden.

*Table A-5. Summary of number and area of SCIs, SACs, SPAs and Natura 2000 sites. Source: National Natura 2000 Database December 2018:*

| | Total sites | Total area (km2) | Terrestrial area (km2) | % of national terrestrial area | Marine area (km2) |
|---|---|---|---|---|---|
| Sites of Community Importance (SCIs) | 2 | 61 | 61 | 0,16 | 0 |
| Special Areas of Conservation (SACs) | 137 | 15.143 | 3.691 | 9,9 | 11.452 |
| Special Protection Areas (SPAs) | 77 | 13.395 | 5.555 | 15 | 7.840 |
| Total Natura 2000 Areas | 161 | 20.610 | 6.194 | 16,7 | 14.416 |

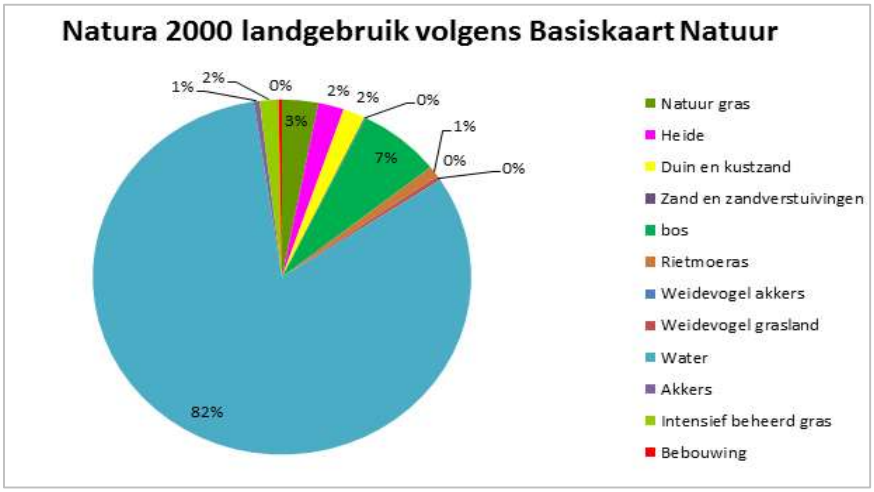
## A.3.3. Main land use cover and ecosystem categories for Natura 2000 sites

The following ecosystem categories apply to the Dutch Natura 2000 sites:

- Coastal habitats
- Dune habitats
- Freshwater habitats
- Heath & scrub
- Sclerophyllous scrubs
- Grasslands
- Bogs, mires & fens
- Forests

As the information on land use in the Dutch Natura 2000 sites in Figure A-1 shows, a large proportion of the designated sites consists of water (82% of the total area). Figure A-2 shows the breakdown of the water component into water types. Some of the work needed to achieve favourable conservation status, therefore, is water management.

The largest part of the water covered areas within the Natura 2000 sites consist of marine waters (81%) and large freshwater lakes (13%). The rest of the water consists of transitional waters (4%) and rivers (2%).



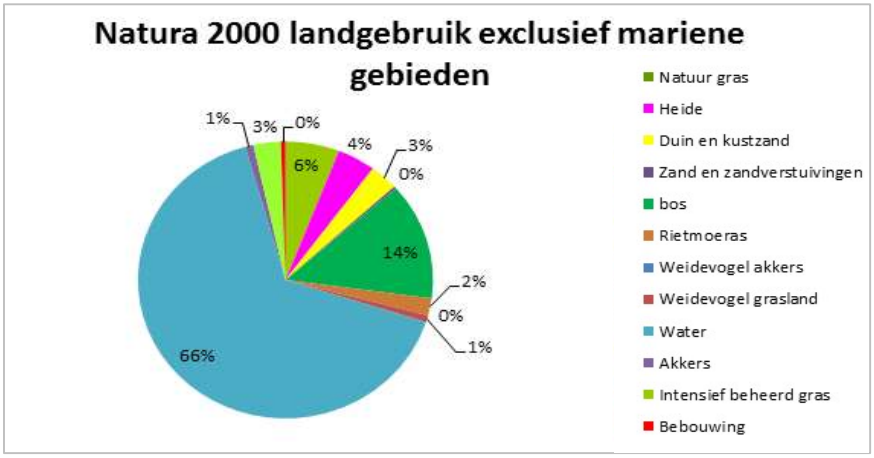




*Figure A-1. Land use in Dutch Natura 2000 sites.*
*Source: Data based on the National Natura 2000 database, 30 September 2011 and the Nature Base Map, 2006 version with 25m grid cells.*

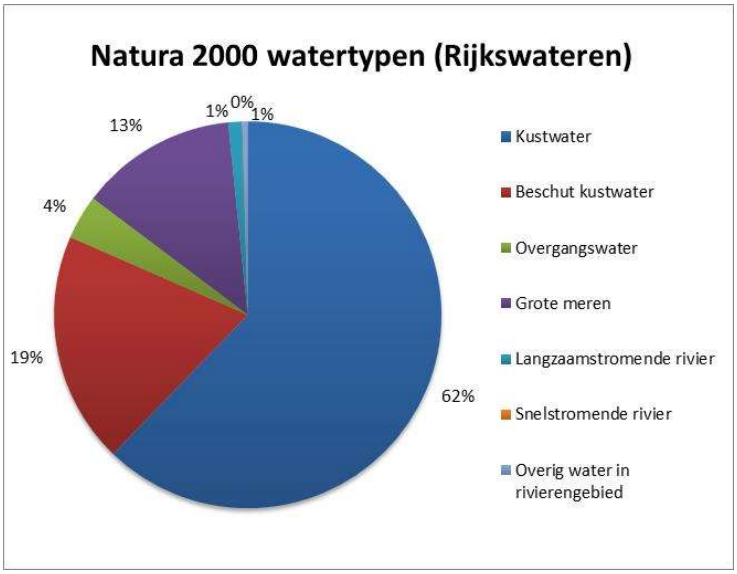



*Figure A-2. Breakdown of the wet Dutch Natura 2000 sites based on water types (area).*
*Source: Data based on the National Natura 2000 database, 30 September 2011 and the Nature Base Map, 2006 version with 25m grid cells.*

***Particular challenges in completing the Netherlands' Prioritised Action Framework 2021-2027***

The main challenge in completing the current PAF have been the challenges related to the nitrogen crisis in the Netherlands. Recently, the Netherlands' national 'Nitrogen reduction and nature restoration act' has been approved. The act comprises the following elements:

- a commitment to reduce nitrogen deposition on Natura 2000 areas through setting limit values (for 2025, 2030 and 2035);
- an obligation for the Minister of Agriculture, Nature and Food Quality to establish a nitrogen reduction and nature improvement programme;
- an obligation for provinces to draw up provincial area plans to implement the nationally required deposition reduction;
- an obligation on the Minister of Agriculture, Nature and Food Quality to draw up an additional programme to legalise previously unlicensed projects with low deposition rates;
- monitoring and adjustment;
- a partial exemption from the nature permit obligation for the building sector.

Hence, the framework for the new nitrogen approach has been established, however this is still to be further detailed in specific programmes and plans and is not yet included in the PAF.

# B. Summary of priority financing needs for the period 2021-2027

For substantiation see Annex 7 and Annex 8.

*Table B-1. Summary of priority financing needs for the period 2021-2027*

| | | Priority financing needs 2021-2027 | |
|---|---|---|---|
| **1.** | **Horizontal measures and administrative costs related to Natura 2000** | Annual operating costs (euro/year) | One-off/project costs (euro/year) |
| 1.1. | Site designation and management planning | 37.086.000 | 1.010.000 |
| 1.2. | Site administration and communication with stakeholders | 5.631.000 | - |
| 1.3. | Monitoring and reporting | 6.975.000 | - |
| 1.4. | Remaining knowledge gaps and research needs | 2.099.000 | 259.000 |
| 1.5. | Natura 2000-related communication and awareness raising measures, education and visitor access | 4.367.000 | - |
| | **Subtotal** | **56.158.000** | **1.269.000** |
| **2.a** | **Conservation and restoration measures for species and habitats related to Natura 2000 sites** | Annual operating costs (euro/year) | One-off/project costs (euro/year) |
| 2.1.a | Marine and coastal waters | 1.601.000 | 22.850.000 |
| 2.2.a | Heathlands and shrubs | 1.590.000 | 17.446.000 |
| 2.3.a | Bogs, mires, fens and other wetlands | 2.624.000 | 90.828.000 |
| 2.4.a | Grasslands | 4.743.000 | 52.203.000 |
| 2.5.a | Other agro-ecosystems (including croplands) | 2.172.000 | 37.522.000 |
| 2.6.a | Woodlands and forests | 2.458.000 | 36.841.000 |
| 2.7.a | Rocky habitats, dunes and sparsely vegetated lands | 1.525.000 | 29.580.000 |
| 2.8.a | Freshwater habitats (rivers and lakes) | 7.010.000 | 29.773.000 |
| 2.9.a | Others | - | 120.000 |
| | **Subtotal** | **23.723.000** | **317.163.000** |
| **2.b** | **Additional "Green infrastructure" measures beyond Natura 2000 (further improving coherence of the Natura 2000 network, including in a cross-border context)** | Annual operating costs (euro/year) | One-off/project costs (euro/year) |
| 2.1.b | Marine and coastal waters | - | 69.000 |
| 2.2.b | Heathlands and shrubs | 1.206.000 | 50.071.000 |
| 2.3.b | Bogs, mires, fens and other wetlands | 1.637.000 | 65.833.000 |
| 2.4.b | Grasslands | 37.577.000 | 99.796.000 |
| 2.5.b | Other agricultural ecosystems (including cropland) | 30.504.000 | 75.345.000 |
| 2.6.b | Woodland and forests | 6.332.000 | 73.331.000 |
| 2.7.b | Rocky habitats, dunes and sparsely vegetated lands | 760.000 | 44.442.000 |
| 2.8.b | Freshwater habitats (rivers and lakes) | 5.251.000 | 37.000 |
| 2.9.b | Others (caves, etc.) | - | - |
| | **Subtotal** | 83.267.000 | **408.924.000** |
| **3.** | **Additional species-specific measures unrelated to specific ecosystems or habitats** | Annual operating costs (euro/year) | One-off/project costs (euro/year) |
| 3.1. | Specie-specific measures and programmes not elsewhere specified | - | 11.333.000 |
| 3.2. | Prevention, mitigation and compensation of damage caused by protected species | - | 344.000 |
| | **Subtotal** | - | 11.677.000 |
| | **Yearly total** | **163.148.000** | **739.053.000** |
| | **Total (2021-2027)** | | **6.315.267.000** |

# C. Current state of the Natura 2000 network

## C. 1. Statistics on the surface area of the Natura 2000 network

Numbers in Table C-1 are based on the National Natura 2000 Database of December 2018. In total there are 161 Natura 2000 sites, 139 of which are designated under the Habitats Directive and 77 under the Birds Directive. These hence exclude the sites where the designation process is ongoing (Krammer-Volkerak and Zoommeer), site-specific conservation objectives for these sites are not yet determined.

*Table C-1*

| | Data on the surface area of Natura 2000 per EU Member State (in km²) | | | | | | Part (%) of the land area covered by: | | |
|---|---|---|---|---|---|---|---|---|---|
| | Terrestrial | | | Marine | | | | | |
| **Name of the region** | **SCI** | **SPA** | **N2K** | **SCI** | **SPA** | **N2K** | **SCI** | **SPA** | **N2K** |
| Atlantic | 3752 | 5555 | 6192 | 11453 | 8740 | 14416 | 9% | 13% | 15% |

## C. 2. Map of the Natura 2000 network in the Netherlands

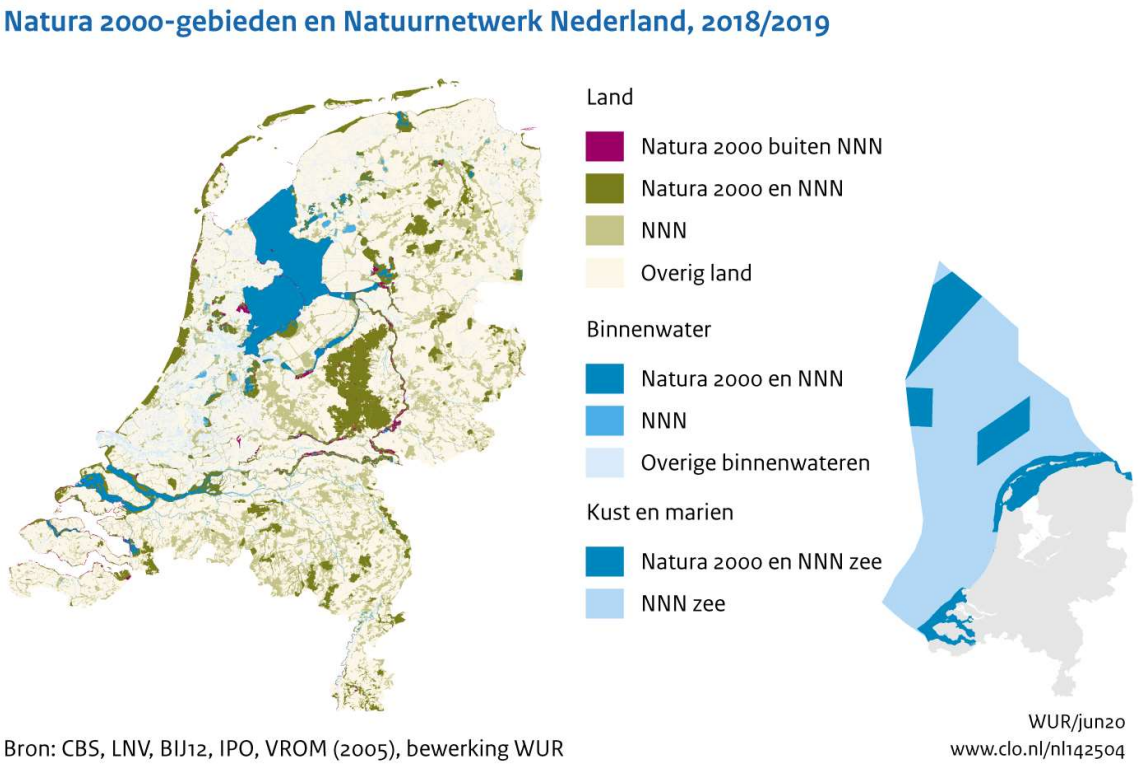



*Figure 3 Map of N2000-areas and the NNN in the Netherlands*

An overview of areas can be found here: https://www.natura2000.nl/gebieden

In addition, an interactive map providing further information on all Natura 2000 areas in the Netherlands can be found here:
https://geocontent.rvo.nl/Natura2000/Overzichtskaart/index.html?provincie=1

# D. EU and national financing of the Natura 2000 network during the period 2014 - 2020

This section provides a comprehensive overview of funding allocated to Natura 2000, the protection of species of EU interest and green infrastructure in the period 2014-2020. These data should assist the Commission and national/regional authorities in assessing the extent to which the financial needs of Natura 2000 are currently being met and the funding gap.

## D.1 European Agricultural Fund for Rural Development (EAFRD)

*Table D-1. Allocation of the EAFRD to the Member State/region (2014-2022):*

| **Measure** | **Total current allocation to the EAFRD measure** | | **Current allocation to actions or sub-measures relevant to Natura 2000** | | **Current expenditure for actions or sub-measures relevant to Natura 2000** | |
|---|---|---|---|---|---|---|
| | **EU** | **National** | **EU** | **National** | **EU** | **National** |
| M4 Investments in physical assets | 116.592.000 | 73.062.000 | N/A | N/A | N/A | N/A |
| M7 Basic services & village renewal in rural areas | N/A | N/A | N/A | N/A | N/A | N/A |
| M8 Investments in forest area | N/A | N/A | N/A | N/A | N/A | N/A |
| M10 Agri-environment climate measures | 388.603.000 | 117.944.000 | N/A | N/A | N/A | N/A |
| M12 Natura 2000 payments | N/A | N/A | N/A | N/A | N/A | N/A |
| M13 Payments to areas facing natural or other specific constraints | N/A | N/A | N/A | N/A | N/A | N/A |
| M15 Forest-environmental and climate services and forest conservation | N/A | N/A | N/A | N/A | N/A | N/A |
| Other measures | 554.447.000 | 343.156.000 | N/A | N/A | N/A | N/A |
| Subtotal | 1.059.642.000 | 534.162.000 | N/A | N/A | N/A | N/A |
| TOTAL | 1.593.804.000 | | | | | |

The programme has been prolonged with 2 years until 2022, the table shows the overall budget. The measures are not directly linked with Natura 2000.

## D.2 European Regional Development Fund (ERDF)/Cohesion Fund (CF)

Total allocation from the ERDF to the Member State/region: 25,5

Total allocation from the Cohesion Fund to the Member State/region: n/a

*Table D-2*

| **Category of intervention** | **Allocations to measures relevant to Natura 2000** | | **Current expenditure for measures relevant to Natura 2000** | | **Comments** (relevance, experience to date, challenges for the next period) |
|---|---|---|---|---|---|
| | **EU** | **National** | **EU** | **National** | |
| 85 Protection and enhancement of biodiversity, nature protection and green infrastructure | | | 16.116.748,73 | | |

| | | | | | |
|---|---|---|---|---|---|
| 86 Protection, restoration and sustainable use of Natura 2000 | | | 9.374.262,46 | | |
| Other categories | | | | | |
| **Subtotal** | | | | | |
| **TOTAL** | | | € 25,5 million | | |

# D.3 European Maritime and Fisheries Fund (EMFF)

*Table D-3. Total allocation from the EMFF to the Member State/Region*

| **Measure** | **Allocations to measures relevant to Natura 2000** | | **Current expenditure for measures relevant to Natura 2000** | | **Comments** (relevance, experience to date, challenges for the next period) |
|---|---|---|---|---|---|
| | **EU** | **National** | **EU** | **National** | |
| - | 0 | 0 | 0 | 0 | In the period 2014-2020 no use has been made of funds from the EMFF for nature. |
| | | | | | |
| **Subtotal** | | | | | |
| **TOTAL** | | | | | |

# D.4 LIFE Programme

*Table D-4*

| **Type of project or financial instrument** | **Current allocations to measures relevant to Natura 2000** | | **Comments** (number of projects, relevance, experience to date, challenges for the next period) |
|---|---|---|---|
| | **EU** | **National** | |
| Traditional projects | 3,5<br>0,36<br>1,1 | 3,5<br>0,24<br>0,7 | In the period 2014-2019 only 1 LIFE Nature project: Fish migration and BirdLIFE (2016) was awarded in the Netherlands. Additionally, a German project (BOVAR) with Dutch partner was executed (360,950 subsidy for NL). In 2017 also LIFE against bird crime (migratory birds, which also come to NL) (budget total 1,827,689, subs 1,088,026). |
| Integrated projects | 10,5 | 7 | LIFE IP Delta Nature |
| Others (NCFF etc.) | 4,2 | 8,6 | 2 projects: LIFE URBAN-ADAPT: demonstrating urban climate adaptation and resilience in inner city Rotterdam LIFE14 CCA/NL/000302 (2014) and Farm LIFE - Farming the Future – Building Rural Networks for Climate-Adaptive Agriculture LIFE17 CCA/NL/000093 (2017) |
| **Subtotal** | 19,7 | 20 | |
| **TOTAL** | 39.7 million | | |

## D.5 Other EU funds, including Interreg:

Total EU co-financing allocated from other EU programmes for the implementation of EU nature policy and related green infrastructure in the Member State/region:

Total national/regional funding allocated to the co-financing of these measures:

*Table D-5. Interreg_A grants awarded (ERDF) by theme and by year of grant, in millions of euros.*

| Theme / Renewal year | 2016 | 2017 | 2018 | total |
|---|---|---|---|---|
| More resource efficiency | 0 | 1,2 | 0 | 1,2 |
| Climate adaptation | 3,8 | 1,3 | 3,8 | 8,9 |
| Environment and resources | 15,4 | 0 | 0 | 15,4 |
| **Total** | **19,2** | **2,5** | **3,8** | **25,5** |

## D.6 Other (mostly national) funding for Natura 2000, green infrastructure and species protection in 2014-2020

Total funding allocated to the implementation of EU nature policy and related green infrastructure, for measures or projects that do not benefit from EU co-financing:

In 2013, the Nature Pact Decentralization of Nature was drawn up[14]. The provinces are responsible for N2000 implementation terrestrial, Ministry of Infrastructure and Water Management for N2000 implementation Great waters.

As part of the Nature Pact, annually €415 million is available for governance of nature, this includes:
- Existing and new nature in Nature Network Netherlands (*Natuur Netwerk Nederland* - NNN)
- Natura 2000 sites
- Recovery management Natura 2000 sites in relation to the nitrogen approach
- Hydrological measures in relation to the nitrogen approach
- Agricultural nature management
- Geese management
- Nature outside Nature Network Netherlands
- Protection of species
- Fauna fund
- Implementation tasks Nature Conservation Act
- Monitoring

Annually €200 million is available for the development of the NNN. This concerns the acquisition and development of new land for nature purposes.

An additional €250 million has been reserved for nature restoration measures[15] related to i.a. nitrogen deposits and PFAS in the year 2020.
In addition, an average of approximately € 46 million is made available annually for nature in the Netherlands from the *Nationale Postcodeloterij*.

[14] https://www.rijksoverheid.nl/documenten/brieven/2013/09/18/natuurpact-ontwikkeling-en-beheer-van-natuur-in-nederland

[15] https://www.rijksoverheid.nl/documenten/kamerstukken/2019/11/13/maatregelenpakket-voor-de-stikstofproblematiek-in-de-woningbouw--en-infrastructuursector-en-voor-de-pfas-problematiek

*Table D-6 Other national funding by source and by year, in millions of euros.*

| **Other national funding** | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | **total** |
|---|---|---|---|---|---|---|---|---|
| Natuurpact | 415 | 415 | 415 | 415 | 415 | 415 | 415 | 2.905 |
| NNN Nature Network Netherlands | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 1400 |
| Postcode Lottery | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 322 |
| Additional funding nitrogen/PFAS | | | | | | | 250 | 250 |
| **Total** | 661 | 661 | 661 | 661 | 661 | 661 | 911 | 4.877 |

# E. Priority measures and financing needs for 2021 - 2027

## E.1 Horizontal measures and administrative costs related to Natura 2000

### E.1.1. Site designation and management planning

**Current status and progress made to date in identifying and designating sites and planning their management (situation: 01/01/2019)**

For each Natura 2000 site a designation decision is drawn up setting out the conservation objectives including ecological arguments. The decision also sets out the demarcation of the site, an account of how the decision was reached and an overview of how the objections lodged were treated. The Ministry of Agriculture, Nature and Food quality bears primary responsibility for drawing up and laying down the designation decisions. The implementation of these government decisions falls within the scope of the General Administrative Law Act of 14 June 1994 (AwB), which prescribes the decision-making procedure in terms of the minimum steps required. This means that the designation decision must be published in draft form and deposited for inspection first. The objections submitted are then dealt with and the competent authority (central government) takes a final decision, against which an appeal can be lodged with the Council of State. During the run-up to the decisions provincial authorities and central government bodies are consulted.

The methodology of setting conservation objectives for Natura 2000 sites is explained in the 'Natura 2000 doelendocument' (2006) (see also English summary). The methodology was similar for habitat types and species (Habitats Directive) and bird species to ensure a coherent approach. Targets have been set on the national level and on the site level. Both are in terms of "conservation" or "improvement". For species and habitat types of the Habitats Directive these targets are qualitative (conserve/enhance/enlarge without Figure s), for birds as much as possible quantitative goals for population are set.

**Habitats Directive Report**
The legal process of designation of Habitats Directive areas started with a public consultation on the draft designation decrees in 2007. In total, more than 40,000 views were submitted, from a wide range of stakeholders. Final indications were then drawn up taking into account these views and ecological data from the areas. The designation of the Habitats Directive sites also updated the designation of the Birds Directive sites. The sites have been designated as Natura 2000 sites, together with overlapping Habitats Directive areas under the Nature Protection Act 1998. In addition, conservation objectives have been added and the boundaries have often been adjusted. Adaptation of the demarcation mostly concerned expansion due to the alignment with overlapping Habitats Directive areas.
All but two Natura 2000 sites have now been definitively designated. In these remaining areas, *Krammer-Volkerak* and *Zoommeer*, it is not yet clear in which direction the development will commence; further towards desalination or back towards a salt ecosystem. The areas in the EEZ first had to be amended to make the Nature Conservation Act applicable to the North Sea as well. This happened in March 2016. The three marine Natura 2000 sites were subsequently designated in June 2016. Furthermore, a new Habitats Directive area was registered in 2017: when the border with Belgium was changed, a Belgian Natura 2000 site was partly located in the Netherlands. The area, *Maas bij Eijsden*, has now been designated as SCI.

The Dutch Nature Conservation Act requires management plans for Natura 2000 sites to be drawn up within 3 years of final designation. The management plans shall detail the conservation objectives set out in the designation decisions in terms of scope, space and time and describe the measures necessary to achieve them. In doing so, existing uses and social interests in the area are taken into account as much as possible. Because many indications have been taken recently and the management plans are being drawn up in consultation with the environment, this process is still in full swing. A total of 126 Natura 2000 sites have now been the subject of definitive management plans (105 for Habitats Directive sites, 65 for Birds Directive sites), 7 other sites are in the process of being consulted, and 21 Natura 2000 sites have yet to go through this procedure (a total of 135 Habitats Directive sites and 74 Birds Directive sites with management plans adopted or under development). For 6 areas (the 3 marine areas, *Krammer-Volkerak, Zoommeer* and *Maas* near *Eijsden*) a start has yet to be made on drawing up a management plan.

**Nitrogen approach**[16]

In the Netherlands, the deposition of nitrogen compounds in the air is in many places higher than the critical deposition value of these habitats. This is harmful to nature, but it also hampers the granting of permits for economic activities. For this reason, the Netherlands developed a Nitrogen Approach Programme (PAS) in 2015. The programme includes source measures to reduce nitrogen emissions and restoration measures to make nature more resistant to nitrogen overload. National recovery strategies have been drawn up, documents defining the most effective recovery measures per habitat and habitat type to mitigate the effects of nitrogen deposition. The recovery measures and the decline in nitrogen deposition due to existing policies and additional source measures also create room for new economic activities. The PAS included all Natura 2000 sites where at least one habitat sensitive to nitrogen is affected by nitrogen overload. This is the case for 118 of the 161 Natura 2000 sites.

In May 2017, the Conseil d'État submitted so-called preliminary questions on the PAS to the Court of Justice in Luxembourg. The Court rendered its judgment on 7 November 2018. The European Court of Justice accepts a system such as the PAS when authorising projects. However, the Administrative Jurisdiction Division of the Council of State ruled on 29 May 2019 that granting permission for activities that are potentially harmful to Natura 2000 areas in *anticipation of* future positive effects of restoration measures is not permitted.

Because nitrogen continues to be a major problem for Dutch nature, work will continue in the coming MFF period to tackle the nitrogen problem. Recovery measures and source measures and research into both remain relevant. A calculation system will remain useful. Therefore, the costs for these measures from the former PAS are included in the coming period.

| | | Number of areas with: | | |
|---|---|---|---|---|
| **Sites of Community Importance (SCI) under the EU Habitats Directive** | **Number of areas** | **legal designation of the area (SAC or equivalent)** | **specific conservation objectives at area level** | **specific conservation measures at area level** |
| **Atlantic region** | 139 | 137 | 139 | 135 |

| | | Number of areas with: | | |
|---|---|---|---|---|
| **Special Protection Areas (SPAs) designated under the EU Birds Directive** | **Number of areas** | **legal designation of the area (SPA or equivalent)** | **specific conservation objectives at area level** | **specific conservation measures at area level** |
| **Atlantic region** | 77 | 77 | 77 | 74 |

**Further measures needed**

Designation decisions concern the legal framework for the Natura 2000 sites. Designation decisions are kept up to date with new knowledge, therefore they have to be amended regularly. Usually these are minor changes, predominantly in demarcation. An update of the target system for Natura 2000 will be carried out in the period 2019-2022. It is likely that this will lead to a greater adaptation of designation decisions from 2022. As a result of the first phase of this update an advice was published[17].

The management plans have a duration of 6 years, so all management plans will be renewed at least once during the period 2021-2027. The costs for this are included in E.1.2

Since nitrogen deposition is the greatest pressure factor for Dutch nature, source measures and recovery measures must continue to be implemented. The measures and costs for these recovery measures are included per ecosystem, here the general costs and the costs for source measures are included.

Personnel commitment to Natura 2000 & nitrogen approach (interdepartmental directorate).

Table E-1 includes the commitment to licensing, enforcement, subsidies, GIS activities and area processes.

In view of the recent developments in the PAS and the additional resources allocated to the nitrogen issue, the information above will be updated in the second half of 2020.

[16] https://www.rijksoverheid.nl/onderwerpen/aanpak-stikstof

[17] https://www.rijksoverheid.nl/documenten/rapporten/2020/04/17/bijlage-adviesrapport-actualisatie-doelensysteem

**Prioritization of measures to be implemented during the next MFF period**

All measures from the previous box are a priority (and will be executed in 2021-2027).

**List of prioritized measures to be carried out, and estimated costs for these measures**

1. Addressing nitrogen issues
2.Updating designation decisions
3.Updating management plans

Personnel deployed for the above measures by the national government (approx. 59 FTEs) and provinces (approx. 265 FTEs).

The data on priority measures was collected from the 12 provinces and from the ministry of Infrastructure and Watermanagement. See Annex 8.
For the costs of restoration no general Figure s per habitat type can be given. Restoration costs differ widely depending on local circumstances, e.g. groundwater Table s and the amount of soil to be removed to create a good start for restoration.
The costs were estimated based on the experience the provinces had during the past 4 years with implementing restoration as part of the PAS-programme. The restoration costs per habitat type and per province are based on the costs which the provinces have planned to spend the coming 7 years.

*Table E-1.[18] Estimated cost of prioritized measures - Designation of areas and management planning*

| Name and brief description of the measures | Type of measure* | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|
| Adaptation of designation decisions: public participation procedure | One-off | 240.000[19] | |
| Nitrogen management and organisation | Recurring | 1.562.000 | LIFE |
| Management and further development calculation tool AERIUS | Recurring | 3.544.000 | |
| Deployment of external expertise approach to nitrogen | Annually | 1.010.000 | LIFE |
| Personnel deployment Natura 2000 & nitrogen approach provinces + state | Recurring | 30.340.000 | |
| Personnel deployment NNN provinces | Recurring | 1.400.000[20] | |
| **Total (annually)** | | **38.096.000** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results**

Up-to-date designation decisions, a working Aerius software and design and implementation of nitrogen measures.

## E.1.2. Site administration and communication with stakeholders

**Current status and progress made so far in terms of site administration and communication with stakeholders**

The Habitats Directive (Article 6(1) and (2)) lays down the minimum requirement of preventing deterioration at site level and making real efforts – based on 'loyal cooperation' – towards meeting the Natura 2000 objectives. These objectives are laid down nationally in the Netherlands and then strategically allocated to the sites in a designation decision. The management plans go into greater detail in terms of space and time. The

[18] See Annex 8, sheet 'Prov+RWS', H5:H11
[19] See Annex 8. This number is based on the conclusions of phase 1 of the Update of the Target Document N2000. It follows from the Phase 1 report that a large part of the Designation Orders for the N2000/areas will have to be revised in the period 2021-2027. This number is based on the assumption that an average of 10 plans per year need to be revised, costing approximately €24,000 per plan (deployment of approximately 75 working days per plan at €400 per day for salary plus overhead costs).
[20] All provinces - except for Zeeland - are still heavily involved in acquiring the NNN until 2027; approximately 40,000 ha remain to be realized (see Progress Report Nature dated October 2019). Assuming that an average of 0.9 FTE per province is involved in the realization and management of the NNN, this results in a total annual cost of 3.52 million. Assuming that 40% of this is at the service of N2000, this results in an annual cost item of approximately 1.4 million euros. Probably still heavy on the low side.

implementation of the objectives may be phased over a number of management plan periods by setting interim objectives. A management plan runs for six years. In general, the first management plan period focuses on conservation; subsequent periods focus more on restoration and development.

The package of measures in the management plans makes a substantial contribution to meeting the Natura 2000 objectives for a particular site. The aim of the package of measures in the first management plan period is mainly to prevent the deterioration of all the designated habitat types and all the habitats of designated species in the Natura 2000 sites. This period is also used to take advantage of the opportunities to enlarge the surface of protected habitats and improve their quality, where possible and required in line with the conservation objectives. This work continues in the subsequent periods.

Responsibility for drawing up the management plans lies primarily with the provinces. Only in sites where Rijkswaterstaat is the largest owner, the ministry of Infrastructure and Water is responsible. The Nature Conservation Act requires a management plan to be drawn up for each Natura 2000 site. Management plans are drawn up in close consultation with owners, users and other government bodies involved, in particular municipal authorities, water boards and provincial authorities.

The competent authority (the ministries and provincial authorities concerned) establishes the management plans. The establishment of a management plan is a government (political) decision, which is subject to the General Administrative Law Act (AwB), as are the designation decisions. Before the management plan can be established a detailed site process takes place, in which all those directly involved (management authorities, users, local residents, municipal authorities, nature conservation organizations and water boards, etc.) are consulted.

The management plan remains in force for six years. Towards the end of this period it is reviewed by the competent authority, which assesses whether the realized measures have led to the desired results. Depending on the results of this review, the validity period of the management plan may be extended by another six years. Or a new management plan, containing new measures, may be drawn up.

The management plan sets out the natural assets and the ecological prerequisites for meeting and/or maintaining the conservation objectives. It also sets out the measures required to ensure that the objectives are met sustainably, stating at what locations and within what time limit they must be implemented, including monitoring and funding. The management plan briefly sets out what funds and grants may be used to fund the measures. It also gives an overview of the activities currently taking place in and around the Natura 2000 site and how they relate to the conservation objectives. If activities are going on that have a negative effect on meeting the conservation objectives, the plan sets out measures to minimize these effects. In the case of future activities that could have a negative effect on meeting the conservation objectives the licensing procedure under the Nature Conservation Act must be followed. The management plan provides a framework for nature policy in the Natura 2000 site and thus lays down the criteria for whether the Act has been correctly applied.

Area processes involving stakeholders in the formulation of the measures have taken place in the preparation of the Natura 2000 management plans. Even if management is going to be carried out, the environment is often informed. Furthermore, many Natura 2000 areas are also national parks. In this context, there is often more extensive communication. These costs are also included here.

For progress on the preparation of the management plans see E1.1.

**Further measures needed**

Communication on new management plans, new management measures to be implemented and possible changes in site designation. In addition, general information on nature and Natura 2000.

**Prioritization of measures to be implemented during the next MFF period**

All measures from the previous box are priority (and will be executed in 2021-2027).

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen issues
Updating designation decisions
Updating management plans

*Table E-2. Estimated costs of priority actions - Area management and communication with stakeholders*

| Name and brief description of the measures | Type of measure* | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|
| Drawing up Natura 2000 management plans Provinces[21] | Recurring | 3.737.000 | |
| Drawing up Natura 2000 management plans fte RWS[22] | Recurring | 1.307.000 | |
| Drafting Natura 2000 management plans external costs (RWS)[23] | Recurring | 527.000 | |
| Maintenance of www.natura2000.nl website[24] | Recurring | 60.000 | |
| **Total (annually)** | | **5.631.000** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results**

Up-to-date management plans for the Natura 2000 sites, allowing management measures for the sites to be implemented in the periods 2021-2027.

## E.1.3. Monitoring and reporting

**Current status and progress made so far in terms of monitoring and reporting**

Monitoring:

The national monitoring of terrestrial plant and animal species is regulated by the Ecological Monitoring Network (*Netwerk Ecologische Monitoring* - NEM). NEM monitoring is tailored to the required information for this reporting (Annex II, IV and V species and typical species). To this end, a number of species are monitored through standardized field protocols (e.g. bats and butterflies). The trend of a number of other species is derived from non-standardized data using advanced statistical methods, including occupancy models (e.g. applied to many species of amphibians and plants). Statistics Netherlands (*Centraal Bureau voor de Statistiek* - CBS) analyses all NEM data and guarantees the quality of the trend estimates. Part of the NEM budget is used for the development of new methods, such as eDNA and the use of batch detectors mounted on cars. In this way, statistically reliable information can be provided for virtually all types of information. For some specie(s) (groups) (bats) the monitoring is not yet executed long enough to provide reliable trends. Expert knowledge will continue to be required for some species that are difficult to monitor (e.g. *Microtus oeconomus arenicola*, *Lucanus cervus*). The standardized and non-standardized data are collected by thousands of volunteers and professionals. The National Database Flora and Fauna (*Nationale Databank Flora en Fauna* - NDFF) has been developed for the storage of species data. This database bundles, unifies and validates nature data in the Netherlands and contains more than 100 million observations. This is a good example of "Citizen Science".

Habitat type maps are produced for all terrestrial Habitats Directive areas. The process of drawing up the habitat type maps is supervised by the Inter-administrative Project Group Habitat Type Maps, in which provinces and national governments innovate the entire creation process and ensure its quality. For example, a national vegetation mapping protocol was drawn up in 2016; a National Vegetation and Habitat Type Map Database was built; and the classification of vegetation images will be standardised and automated according to the revised Vegetation of the Netherlands.

The Ministry of Agriculture, Nature and Food Quality and the Ministry Infrastructure and Water Management are working together on a joint monitoring programme for the Marine Strategy Framework Directive (*Kaderrichtlijn Marien* - KRM), and have set up the 'Marine Information House' for data access. The objectives of the KRM, and thus its monitoring and assessment, are as close as possible to those of the Habitats Directive and Birds Directive. These include birds, marine mammals, fish and macro zoobenthos (marine habitat types). The state of the Dutch North Sea was reported for the first time in October 2018. Furthermore, the monitoring for

[21] See Annex 8: Sheet 'Prov+RWS', H14
[22] See Annex 8: Sheet 'RWS', P27
[23] See Annex 8: Sheet 'RWS', L27
[24] See Annex 8: Sheet 'Prov+RWS', H17

HD and the Water Framework Directive (*Kaderrichtlijn Water* - KRW) has been coordinated as much as possible in the national waters. These include fish, macro zoobenthos, aquatic plants, eelgrass and salt marshes. Where possible alignment is sought with the HD in the assessment of KRW (This is not always possible e.g. because the KRW considers species communities, whereas the HD targets individual species).

Since 2014, monitoring is also carried out for the Nature Network Netherlands under the Nature and Landscape Subsidy Scheme (*Subsidiestelsel Natuur en Landschap* - SNL). The monitoring aims to simultaneously provide data for the Natura 2000 objectives, which will be further operationalised.
In 2016, the provinces, together with SOVON, developed habitat maps for all species of the Birds and Habitats Directives, indicating the current and potential habitat, including its quality. In addition, specific monitoring focuses on the location, size and quality of habitat types and the habitats of nitrogen-sensitive species. In addition, targeted field visits also take place, the progress of all required recovery measures is monitored centrally and the effectiveness of the measures is monitored by means of so-called process indicators - to see whether the intended remedial process is taking place.

Reports:
In the period 2017-2019, work was carried out on drawing up the national reports for the Habitats Directive (Article 17) and the Birds Directive (Article 12). In addition, an annual review is carried out to determine whether the Standard Data Form (SDF) needs to be adjusted. Derogation reports are delivered every year or every two years in accordance with the requirements.

**Further measures needed**

Monitoring to determine progress of nature quality, and to determine the effectiveness of the measures. The monitoring and reporting described above includes all activities necessary for this purpose.

**Prioritization of measures to be implemented during the next MFF period**

All measures from the previous box have priority (and will be executed in 2021-2027).

**List of prioritized measures to be carried out, and estimated costs for these measures**

Executing monitoring

Drafting reports

*Table E-3[25]. Estimated costs of prioritized measures - Monitoring and reporting*

| Name and brief description of the measures | Type of measure* | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|
| Regular monitoring based on standard costs (provinces) | Recurring | 2.206.000 | |
| Additional "nitrogen related" monitoring | Recurring | 1.910.000 | LIFE |
| Monitoring costs of provinces mentioned in individual habitat groups are deducted | Recurring | -1.485.000 | |
| Monitoring ammonia/nitrogen | Recurring | 738.000 | |
| Ecological Monitoring Network (NEM) (LNV contribution) | Recurring | 2.700.000 | |
| Monitoring in the context of TMAP (*Waddenzee*) (WOT-IN) | Recurring | 520.000 | |
| Monitoring *Phocoena phocoena* (WOT-IN) | Recurring | 145.000 | |
| National reporting Habitats Directive (Art. 17) (total amount divided by 7) | Recurring | 133.000 | |
| National reporting Birds Directive (art. 12) (total amount divided by 7) | Recurring | 23.000 | |
| Update SDF (incl. rough estimate costs provinces) | Recurring | 60.000 | |
| Derogation reports (WOT-IN + time provinces) | Recurring | 25.000 | |
| **Total (annually)** | | **6.975.000** | |

* Indicate whether the measure is recurrent or one-off.

[25] See Annex 8: Sheet 'Prov+RWS', H21:H32

**Expected results**

| |
|---|
| Complete reports on all species and habitat types based on good data and statistically reliable information. |

### E.1.4. Missing knowledge and research needs

**Current status**

| |
|---|
| In the period 2020-2021 further research has been conducted with regard to possibilities to achieve a favourable conservation status (in the longer run, period up to 2030 and 2050) in which this is currently problematic, and into possibilities to achieve additional nature improvement goals within and in the surroundings of Natura 2000 areas. The first element of this research was a quick-scan of Natura 2000 to acquire further insight in the extent to which objectives can be met, for the period up to 2030 as well as the longer run - the period up to 2050.. As a follow-up, further research is currently conducted by Wageningen Environmental Research. |

**Further measures needed**

| |
|---|
| • Research into additional restoration measures for dry sand landscapes and associated N2000 targets.<br>• Research into long term perspective N2000 targets in case of too high nitrogen load.<br>• Research on the effects of climate change on Natura 2000<br>• Research on meadow birds in the Netherlands |

**Prioritization of measures to be implemented during the next MFF period**

| |
|---|
| A further prioritisation of measures is currently being determined within the framework of the development of a Strategic Nature Plan. Scientific input for this strategic plan will be provided through different sources, including the study conducted by Wageningen Environmental Research. |

**List of prioritized measures to be carried out, and estimated costs for these measures**

| |
|---|
| See above. |

*Table E-4[26]. Estimated costs of priority actions - Knowledge and research needs still missing*

| Name and brief description of the measures | Type of measure* | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|
| Research provinces, as far as not included in section E2 | One-off | 59.000 | |
| Total indicative necessary research costs based on 1,0 % of the total `conservation and restoration measures for species and habitats for N2000-NNN`. | Recurring | 1.755.000 | LIFE |
| Research costs of provinces mentioned in the individual habitat groups are deducted | | -982.000 | |
| Policy support research nature restoration strategies | Recurring | 150.000 | LIFE |
| Nitrogen research and knowledge sharing | Recurring | 131.000 | LIFE |
| Research into sustainable Lutra populations (WOT-IN) | Recurring | 145.000 | |
| Policy support research for the Natura 2000 system (WUR) | One-off | 200.000 | LIFE |
| OBN knowledge development | Recurring | 500.000[27] | LIFE |
| OBN knowledge dissemination | Recurring | 400.000[28] | LIFE |
| **Total (annually)** | | **2.358.000** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results**

| |
|---|
| More knowledge about recovery measures, long-term perspective in the event of excessive nitrogen load, effects of climate change, definition of conservation status, etc. |

[26] See Annex 8: Sheet 'Prov+RWS', H35:H42
[27] Based on the averages spent on this item in recent years.
[28] Based on the averages spent on this item in recent years.

## E.1.5. Communication and awareness-raising, information and access for visitors in the context of Natura 2000

**Current status**

The Netherlands' government has created a central online entry-point for information on Natura 2000, through its website https://www.rijksoverheid.nl/onderwerpen/natuur-en-biodiversiteit/natura-2000, which enables access to further detailed information on the 167 Natura 2000 sites via the dedicated website https://www.natura2000.nl/, as well as to relevant regulations and main issues (nitrogen and water quality).

In addition, the provinces have developed communication strategies for Natura 2000 in their region as well as for individual sites. The latter as part of the management plan for the areas, which all include a communication paragraph and an indication of funding available for communication. This generally includes the development of communication materials (information boards, leaflets, online articles) and information activities for visitors of the site such as information days, excursions and presentations. In some cases a separate communication plan is developed for individual Natura 2000 sites, for example for the Natura 2000 sites Voordelta and Vlakte van de Raan.

Furthermore, for specific topics additional communication efforts have been mobilised to explain the issue, and create awareness and support for measures taken - in recent years these were mainly related to the reduction of nitrogen deposits.

**Further measures needed**

The regular, site-related communication activities foreseen as part of the management plans will be continued in the newly established management plans and remain an essential basis to explain the specific values of the particular Natura 2000 site to a wider audience, and as a consequence create awareness and support for Natura 2000, nature and biodiversity in general.

Communication will also remain an essential element of the sensitive issue of reducing nitrogen deposits in view of the restrictions this poses on economic activity including agriculture and construction works. Ensuring support for these sensitive measures requires careful explanation of the nature and biodiversity values that are protected.

In addition, specific communication activities are foreseen by the Ministry of LNV and other organisations in view of ongoing projects (including the LIFE IP's Delta Nature and All4Biodiversity) and participation in networks such as the Deltaplan Biodiversity Recovery.

**Prioritization of measures to be implemented during the next MFF period**

The proposed measures to reduce nitrogen deposits and other emissions, and measures taken in relation to climate adaptation and mitigation, and their importance for nature and biodiversity will remain prominent topics of communication in the coming planning period.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Prioritised communication measures will be defined as part of specific topic dossiers at the level of the national government and provinces, the revision, development and implementation of management plans for Natura 2000 sites and specific projects and (subsidy) programmes in support of enhancing nature and biodiversity.

*Table E-5[29]. Estimated costs for priority actions - Communication and awareness-raising, information and access for visitors in the context of Natura 2000*

| Name and brief description of the measures | Type of measure* | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|
| Communication costs separate from management plans (provinces)[30] | Recurring | 4.366.334 | LIFE/EAFRD |
| | | | |

* Indicate whether the measure is recurrent or one-off.

**Expected results**

Well-informed visitors to Natura 2000 sites.

Increasing awareness and broad support for measures aimed at improving nature and biodiversity, for specific target groups and for the public at large.

### E.1.6. References (for horizontal measures and administrative costs related to Natura 2000)

Area designation: https://www.natura2000.nl
Management plans:
https://www.bij12.nl/onderwerpen/natuur-en-landschap/natura-2000-beheerplannen/
http://rwsnatura2000.nl/Gebieden/default.aspx
Research:
https://www.wur.nl/nl/Onderzoek-Resultaten/Onderzoeksprojecten-LNV/Expertisegebieden/Beleidsondersteunend-onderzoek.htm
www.natuurkennis.nl

## E.2 Area related conservation and remediation measures, inside and outside Natura 2000

### E.2.0. General introduction on pressure factors and conservation measures

**Overview of pressures and threats to species and habitats**

Table E-6 and Table E-7 give an overview of the pressures and threats to species and habitat types in the Netherlands, Table E-6 gives an overall overview and Table E-7 gives an overview of the Large waters. These pressures and threats refer to number of species and habitat types, facing specific threats and pressures, and are prepared according to methodology for preparation of the Article 17 report, published on webpages of the European Commission.

*Table E-6. Pressures and threats reported for habitat types and species. Source: NL art. 17 report (2019).*

| | Habitats | | Types | | Breeding birds | |
|---|---|---|---|---|---|---|
| **Pressures and threats** | **Number of pressures** | **Number of threats** | **Number of pressures** | **Number of threats** | **Number of pressures** | **Number of threats** |
| Agriculture (management) | 27 | 26 | 70 | 70 | 51 | 51 |
| Agriculture (manure) | 23 | 21 | 31 | 30 | 41 | 41 |
| Agriculture (pesticides) | | | 19 | 18 | 20 | 20 |
| Forestry | 11 | 10 | 20 | 21 | 4 | 5 |
| Extraction of raw materials | 4 | 3 | 6 | 6 | | 2 |
| Energy | | 1 | 11 | 11 | 12 | 47 |
| Infrastructure | 7 | 6 | 49 | 49 | 12 | 13 |

[29] See Annex 8: Sheet 'Prov+RWS', H45
[30] Here there is a strong overlap with the "communication part" in 1.2. Wherever possible, communication costs that only relate to informed visitors are listed here.

| | | | | | | |
|---|---|---|---|---|---|---|
| Urban development | 12 | 10 | 92 | 98 | 25 | 27 |
| Fishing and hunting | 6 | 2 | 29 | 28 | 12 | 12 |
| Defence and security | | | 32 | 32 | | |
| Invasive species | 24 | 27 | 18 | 18 | 3 | 3 |
| Pollution | 13 | 21 | 10 | 10 | 2 | 3 |
| Water management | 33 | 33 | 42 | 42 | 46 | 45 |
| Natural processes | 38 | 41 | 36 | 37 | 30 | 32 |
| Catastrophes | | | 1 | 1 | | |
| Climate change | 12 | 18 | 11 | 22 | 11 | 33 |
| Outside Member State | | | 5 | 4 | 22 | 9 |

*Table E-7. Pressures and threats reported for habitat types and species in **large waters**. Source: NL art. 17 report (2019).*

| **Pressures and threats (Large waters)** | Habitat types | Habitat species | Breeding birds | Non-breeding birds |
|---|---|---|---|---|
| A - Agriculture | 2 | 3 | 5 | 8 |
| B - Sylviculture, forestry | 1 | | | |
| C - Mining, extraction of materials and energy production | | 3 | | |
| D - Transportation and service corridors | | 4 | | 1 |
| E - Urbanisation, residential and commercial development | | 5 | | |
| F - Biological resource use other than agriculture & forestry | 3 | 4 | 2 | 7 |
| G - Human intrusions and disturbances | | 1 | 3 | 3 |
| H - Pollution | p.m. | p.m. | | |
| I - Invasive, other problematic species and genes | 1 | 3 | | |
| K - Natural biotic and abiotic processes (without catastrophes) | 7 | 2 | | |
| L - Geological events, natural catastrophes | | | | |
| M - Climate change | | p.m. | p.m. | p.m. |
| **Total number of designated species/habitat types** | **21** | **17** | **14** | **23** |

Habitat fragmentation, atmospheric nitrogen deposition, desiccation and acidification are still major threats to terrestrial biodiversity in the Netherlands. While spatial connectivity is improved and the natural area increased by the Nature Network Netherlands, spatial requirements for some species will still not be met. While nitrogen deposition decreased substantially due to environmental measures to reduce the pressures, such as emission measures in agricultural practice, two-thirds of the natural area still exceeds the critical load for nitrogen deposition. Desiccation is still also present in over 90% of the area of groundwater dependent nature. At sea the main threat to biodiversity still comes from pollution due to discharges and the fishing industry, where trawling and by-catch in particular are threatening bottom fauna and long living slow reproducing species, like sharks and rays. Though the threats described above are (gradually) declining, the threat of potentially invasive exotic species entering the Netherlands is increasing, and may be exacerbated/amplified through the influence of climate change (Source: Ministry of Economic Affairs, 2014c).

About two thirds of nature reserves suffer from at least one pressure and mostly from a combination of nitrogen deposition and desiccation. Ecosystems like heather and open dune areas did not improve and their habitats still degrade, but the degradation of habitats in marsh land stopped (Source: Ministry of Economic Affairs, 2014c).

Nature in the large waters of the Dutch Delta (with its species and habitat types) flourishes particularly well in dynamic conditions, i.e. with gradients in abiotic parameters such as flow rates, wave energy, wind speed etc, or conditions favourable for the development of new habitats, thus avoiding unbalanced development towards late succession stages (‘rigidity’). Large programmes such as Room for River and Building with nature solutions for water safety (including dynamic coastal zone management) are believed to broaden dynamic conditions, thereby contributing to biodiversity.

In the case of the Large Waters, Table E-7 also lists other problems, such as intensive farming, urbanization, hunting and fishing, water pollution due to agriculture, industry and overflow, nitrogen emissions, alterations to the natural system (dikes, land reclamation, sand extraction, etc.), erosion, and succession. The next paragraph looks at the Large Waters in more detail, based on the Natura 2000 management plans.

Conclusion: desiccation, acidification, eutrophication, water quality, and lack of natural dynamics are the biggest problems for habitat types and species and biodiversity in general.

**Management plans for Large Waters**

Natura 2000 management plans have been or are being drawn up for the 24 Large Waters in the Netherlands[31]. This paragraph briefly summarizes the relevant results of these management plans at aggregated level.

In some cases habitat types, habitat species and birds in the Large Waters are confined to those sites, but in many cases they also occur in the dry Natura 2000 sites. The situation (favourable, unfavourable inadequate or unfavourable bad) of each habitat type and species in the 24 Large Waters has been estimated based on the current status as set out in the management plans, the national conservation status and the percentage at which the habitat or species occurs in the Large Waters. The habitat types and species have been clustered to yield an overall picture. Table E-8 shows the clusters that scored as poor and how many habitat types and species in them scored as poor. The coastal nesting birds, stilts, fish eaters, zoobenthos feeders and migrating fish scored the highest numbers.

*Table E-8. Clusters of habitat types and species in the Large Waters for which a large proportion of the sites have problems. The number of species and habitat types having problems is shown for each cluster.*

| | Cluster | Number |
|---|---|---|
| Habitat types | Grassland | 1 |
| | Rivers | 1 |
| | Salt meadows | 1 |
| | Quaking bogs | 2 |
| | Salt water | 3 |
| Habitat species | Migrating fish | 4 |
| | Marine Mammals | 1 |
| | Mammals | 1 |
| Birds | Zoobenthos feeders | 4 |
| | Coastal nesting birds | 8 |
| | Marsh nesting birds | 3 |
| | Birds of prey | 1 |
| | Stilts | 4 |
| | Fish eaters | 4 |

Problems as outlined in the management plans for the 24 Natura 2000 sites in the Large Waters (in Annex 4 the Large Waters are presented in **bold**):

***IJsselmeer* region** (Natura 2000 sites: *IJsselmeer, Markermeer & IJmeer, Ketelmeer & Vossemeer, Eemmeer & Gooimeer Zuidoever, Zwarte Meer, Veluwerandmeren*)

- Inadequate quality and size of reed marsh for nesting birds
- Inadequate size of nesting sites on bare or sparsely covered land
- Inadequate availability of food for birds
- Inadequate quality and size of habitat types
- Inadequate peace and space for birds

**Delta region** (Natura 2000 sites: *Voordelta, Grevelingen, Hollands Diep, Oosterschelde, Westerschelde, Haringvliet, Oude Maas, Veerse Meer*)

- Inadequate dynamics for tundra vole habitat
- Inadequate dynamics for coastal nesting birds' nesting sites
- Inadequate dynamics for quality of habitat types
- Inadequate peace due to activities
- Barriers to migrating fish trying to enter the large inland waters

[31] https://www.rijkswaterstaat.nl/water/waterbeheer/beheer-en-ontwikkeling-rijkswateren/natura-2000/index.aspx

**North Sea coast** and ***Waddenzee***

- Inadequate food for young fish and marine ducks
- Quality of channels and water bodies and tidal flats that dry out daily
- Salt marsh vegetation invaded by scrub
- Barriers to migrating fish trying to enter the large inland waters from the *Waddenzee*
- Inadequate nesting sites for coastal birds
- Disturbance to seals and common *Phocoena phocoenas*

***Grensmaas***

- Water quality
- Imbalance between coarse and fine gravel and sand fractions
- Flow (not enough or too much)
- Fluctuations in water level
- Increase in water recreation

In the case of the other sites it was difficult to identify overall problems because the management plans were incomplete or had not been drawn up yet.

The management plans include measures to tackle the above problems, with targets set for the first or second management plan period, or in some cases later.

Above are not mentioned the Large Waters with Natura 2000 sites like *Rijntakken, Uiterwaarden, Lek, Lauwersmeer*, etc. A bottleneck in implementing Natura 2000 in the Netherlands for the Large Waters in the current situation is a lack of an integrated and strategic plan to tackle the threats and pressures in these areas (Table E-7).

### E.2.1. Marine and coastal waters

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H1110 | Permanently flooded sandbanks | FV | FV | U2 | U2 | U2 | + |
| H1130 | Estuaries | U2 | U2 | U2 | U2 | U2 | - |
| H1140 | Mudflats and sandflats | FV | FV | U1 | U1 | U1 | = |
| H1160 | Large bays | FV | FV | U2 | U2 | U2 | - |
| H1170 | Reefs | FV | FV | U2 | U1 | U2 | = |
| H1310 | Saline pioneer vegetation | FV | FV | FV | U1 | U1 | + |
| H1320 | Spartina swards (*Spartinion maritimae*) | FV | FV | U1 | U1 | U1 | + |
| H1330 | Atlantic salt meadows | FV | U1 | U1 | U1 | U1 | + |

*Figure E-1. Habitats - Marine and coastal waters*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| H1364 | Halichurus grypus | Grijze zeehond | FV | FV | FV | FV | FV | + |
| H1365 | Phoca vitulina | Gewone zeehond | FV | FV | FV | FV | FV | + |
| H1351 | Phocoena phocoena | Bruinvis | FV | FV | FV | XX | FV | = |
| H2032 | Lagenorhynchus albirostris | Witsnuitdolfijn | FV | XX | XX | XX | XX | x |

*Figure E-2. Species - Marine and coastal waters*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Short term trend population 12 years | Long term trend population since 1979 |
|---|---|---|---|---|---|
| A001 | Gavia stellata | Roodkeelduiker | W | - | + |
| A002 | Gavia arctica | Parelduiker | W | x | x |
| A005 | Podiceps cristatus | Fuut | W | = | + |
| A007 | Podiceps auritus | Kuifduiker | W | - | + |
| A008 | Podiceps nigricollis | Geoorde Fuut | W | ? | + |
| A026 | Egretta garzetta | Kleine Zilverreiger | W | ? | + |
| A048 | Tadorna | Bergeend | W | + | + |
| A062 | Aythya marila | Topper | W | + | = |
| A063 | Somateria mollissima | Eider | B | - | - |
| A063 | Somateria mollissima | Eider | W | = | - |
| A069 | Mergus serrator | Middelste Zaagbek | W | = | = |
| A130 | Haematopus ostralegus | Scholekster | W | - | - |
| A132 | Recurvirostra avosetta | Kluut | B | - | - |
| A132 | Recurvirostra avosetta | Kluut | W | + | + |
| A137 | Charadrius hiaticula | Bontbekplevier | B | - | - |
| A137 | Charadrius hiaticula | Bontbekplevier | P | + | + |
| A138 | Charadrius alexandrinus | Strandplevier | B | - | - |
| A138 | Charadrius alexandrinus | Strandplevier | P | - | - |
| A140 | Pluvialis apricaria | Goudplevier | W | = | = |
| A141 | Pluvialis squatarola | Zilverplevier | P | = | + |
| A143 | Calidris canutus | Kanoet | P | + | + |
| A144 | Calidris alba | Drieteenstrandloper | W | + | + |
| A147 | Calidris ferruginea | Krombekstrandloper | P | ? | = |
| A149 | Calidris alpina | Bonte Strandloper | P | + | + |
| A149 | Calidris alpina | Bonte Strandloper | W | = | + |
| A157 | Limosa lapponica | Rosse Grutto | W | = | + |
| A161 | Tringa erythropus | Zwarte Ruiter | P | - | - |
| A162 | Tringa totanus | Tureluur | W | ? | = |

| | | | | | |
|---|---|---|---|---|---|
| A164 | Tringa nebularia | Groenpootruiter | P | - | = |
| A169 | Arenaria interpres | Steenloper | W | = | = |
| A176 | Larus melanocephalus | Zwartkopmeeuw | B | + | + |
| A193 | Sterna hirundo | Visdief | B | - | + |
| A194 | Sterna paradisaea | Noordse Stern | B | ? | - |
| A391 | Phalacrocorax carbo sinensis | Aalscholver | W | = | + |
| A489 | Larus fuscus all others | Kleine Mantelmeeuw | B | = | + |
| A675 | Branta bernicla | Rotgans | W | + | + |
| A768 | Numenius arquata | Wulp | W | = | + |
| A862 | Hydrocoloeus minutus | Dwergmeeuw | P | ? | - |
| A863 | Thalasseus sandvicensis | Grote Stern | B | ? | + |
| A885 | Sternula albifrons | Dwergstern | B | ? | + |
| A900 | Melanitta nigra s. str. | Zwarte Zee-eend | W | - | - |

*Figure E-3. Bird species - Marine and coastal waters*
*Source: article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019**

Of the 8 marine and coastal habitat types (H1110 Permanently Flooded Sandbanks, H1130 Estuaries, H1140 Mudflats and sandflats, H1160 Large bays, H1170 Reefs, H1310 Saline pioneer vegetation, H1320 Spartina swards, H1330 Atlantic salt meadows) 4 score very unfavourable, namely: H1110, H1130, H1160, H1170. This is mainly due to their unfavourable structure and function. See Figure E-1.

The 4 remaining habitat types score moderately unfavourable. The habitat types are favourable in terms of range and surface area, with the exception of salt marshes and salt grasslands. Only estuaries are judged to be very unfavourable on all fronts, with a decreasing trend.

All three marine mammals are judged to be favourable, both seals also show an increasing trend. The Lagenorhynchus albirostris is a rarely sighted, for which there is not enough data to provide an assessment of its conservation status.

**Birds**

The birds of marine and coastal waters (including the beach) in the Netherlands appear mainly during the migratory and winter period, breeding birds are only Sterna, beach-breeding Charadrius. Of the 41 birds of marine and coastal waters, 7 have a negative trend in both short and long term (species such as Somateria mollissima, Melanitta nigra s. str. and Charadrius alexandrinus). 8 species show a positive trend for a long time (e.g. a number of wintering Scolopacidae, Tadorna tadorna and Branta bernicla bernicla). In the long term there is still a positive trend among 14 species, but this trend is levelling off (e.g. wintering Numenius arquata arquata, Limosa lapponica and Podiceps cristatus) or in some cases reversed to a decline (wintering Gavia stellata, Podiceps auritus and brooding Sterna hirundo).

**Main pressure factors**

For marine mammals: extraction of gas, oil, etc., wind energy, shipping lanes and fishing. For both seals, coastal development (lack of quiet moorings) is a particular risk.
For habitat types, water pollution, sea level rise due to climate change and changes in currents and physical changes in the water body are reported as main pressure factors. Marine fisheries and invasive exotic species are also very important. The habitat types saline pioneer vegetation (1310), Spartina swards (1320) and Atlantic salt meadows (1330) are sensitive to nitrogen deposition.
For the birds, pollution is by far the greatest pressure factor. In addition, the use of the sea for shipping and (development of) dams as well as the changes that have been made to water bodies are a threat. For the breeding birds, succession (densification of open pioneer situations) is also a threat.

**Necessary measures to maintain or restore a favourable conservation status**

In marine and coastal waters, disturbance is generally the main bottleneck, many measures relate to ensuring rest and sufficient food for birds and marine mammals, limiting soil disturbance associated with protected habitat types.
- Placement of buoys and information boards to regulate recreation
- Measures to restrict fishery

In addition, there are a number of systemic constraints that have created bottlenecks to Natura 2000 objectives. In the period 2021-2027 system measures will be taken (PAEGW). This involves:
- Collecting sludge (inside and outside the dikes) in the Eems-Dollard/Wadden Sea to improve sludge management;
- Sediment management in the *Westerschelde* estuary;
- Sand supplementation *Galgeplaat* to satisfy the sand demand in the *Oosterschelde* estuary;
- Restoring the tide in *Grevelingen*.

KRW measures:
- Fish passage *Zuidwatering Ritthem*
- Pilot planting of eelgrass
- Optimisation of fish migration *Volkeraksluizen*
- Fish passage at pumping station *Borssele*
- Eelgrass *Grevelingen*

**Prioritization of measures to be implemented during the next MFF period**

Ensuring a quiet environment and sufficient food for birds and marine mammals, limiting soil disturbance associated with protected habitat types.
Listed measures will be implemented in the period 2021 - 2027.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen issues
Updating designation decisions
Updating management plans

Further elaboration of the measures listed above can be found in the PAEGW and the KRW documents, the other measures are partly included in the current management plans and will be included in the amended management plans that have yet to be drawn up.
PAEGW: https://www.helpdeskwater.nl/onderwerpen/water-ruimte/ecologie/programmatische/
KRW: https://www.helpdeskwater.nl/onderwerpen/wetgeving-beleid/kaderrichtlijn-water/publicaties-krw/werkprogramma-krw/
N2000: https://rwsnatura2000.nl/Gebieden/default.aspx

*Table E-9. Estimated cost of prioritized measures within Natura 2000 sites - Marine and coastal waters*

| Name and brief description of the measures | Type of measure* | Target value (1=100Ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| Measures to regulate activities (RWS)[32] | Recurring | - | 387.000 | |
| System measures (PAEGW) (RWS)[33] | One-off | - | 19.457.000 | |
| KRW measures (RWS)[34] | One-off | - | 443.000 | |
| Management and maintenance (RWS)[35] | Recurring | - | 526.000 | |
| Fte Rijkswaterstaat (RWS)[36] | Recurring | - | 688.000 | |

[32] See Annex 8: Sheet ' Prov+RWS', I59
[33] See Annex 8: Sheet ' Prov+RWS', J60
[34] See Annex 8: Sheet ' Prov+RWS', J61
[35] See Annex 8: Sheet ' Prov+RWS', I62
[36] See Annex 8: Sheet ' Prov+RWS ', J63

| | | | | |
|---|---|---|---|---|
| Natura 2000 specific conservation and restoration measures (complementary to RWS)[37] | One-off | - | 2.950.000 | LIFE |
| **Total (annually)** | | | **4.865.286** | |

*Table E-10. Estimated cost of additional measures outside Natura 2000 sites - Marine and coastal waters*

| Name and brief description of the measures | Type of measure* | Target value (1=100Ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| Natura 2000 specific conservation and restoration measures, beyond the borders[38] | One-off | | 69.000 | LIFE |
| **Total (annually)** | | | **9.857** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

By regulating disruptive activities, areas will be quieter and more food will be available. This is positive for the species and habitat types in these areas.
By taking systemic measures, more robust ecosystems with more natural dynamics are created, which benefits species and habitat types in the concerned areas.
Most of the objectives will be achieved after the measures have been taken; for a number of species and habitat types more time is probably needed. Which species are involved is not exactly clear at this moment.

**Open water[39]**
- Conservation of marine ecosystem with permanently flooded sandbanks (North Sea coastal zone) H1110_B4 , as habitat for Melanitta nigra s. str. A065, Gavia stellata A001, Aythya marila A062 and Somateria mollissima A063, with soils of different ages and more natural build-up of fish populations.
- Quality improvement of the marine mammal habitat.
- Quality improvement of permanently flooded sandbanks (tidal zone) H1110_A e.g. biogenic structures with mussels. Also important as a habitat for Somateria mollissima A063 and Melanitta nigra s. str. A065 and as a breeding area for fish.
- Maintain foraging function fish-eating birds in particular for Podiceps cristatus A005, Podiceps nigricollis A008 and Mergus serrator A069.

**Estuaries and fresh-saline transition[40]**
- Quality improvement of estuaries H1130 Westerschelde (space, ratio between subsystems and low-productive and high-productive parts) and quality maintenance of *Eems-Dollard*.
- Restore influence of salt in *Haringvliet*, especially for migratory fish, such as Petromyzon marinus H1095, Alosa H1102, Alosa fallax H1103 and Salmo salar H1106, and also for brackish variant of rugged areas and fringes (Epilobium hirsutum) H6430_B and salt marshes and salt grasslands (outer dike) H1330_A.
- Restore fresh-saline transitions (e.g. via sluice solutions and fish passages) in the interest of *Afsluitdijk*, *Westerwoldse Aa* and *Lauwersmeer/Reitdiep* in relation to *Drentsche Aa* (Lampetra fluviatilis H1099).
- Maintain connection between *Schelde* and *Eems* for spawning function for Alosa fallax H1103 in Belgium and Germany.

**Tidal plates**
- Improvement of the quality of mudflats and sandflats (tidal zone) H1140_A to increase diversity.
- Preserve swallows and plates for resting and foraging non-breeding birds such as for Calidris alpina A149, Limosa lapponica A157, Haematopus ostralegus A130, Calidris canutus A143, Arenaria interpres A169 and Somateria mollissima A063 and resting areas for Phoca vitulina H1365 and Halichurus grypus H1364.

**Permanently dry sandbanks and beaches[41]**
- Preserve and restore undisturbed flood escape sites.

[37] See Annex 8: Sheet 'Prov+RWS', J64
[38] See Annex 8: Sheet 'Prov+RWS', J68
[39] See Natura 2000 targets document, p.69
[40] See Natura 2000 targets document, p.69
[41] See Natura 2000 targets document, p.70

- Preserve undisturbed resting places and optimal reproductive habitat (including embryonic shifting dunes H2110) for Charadrius hiaticula A137, Charadrius alexandrinus A138, Recurvirostra avosetta A132, Thalasseus sandvicensis A191 and Sternula albifrons A195, Sterna hirundo A193 and Halichurus grypus H1364.
- Preservation of isolated islands as a habitat for Microtus oeconomus arenicola *H1340 (inaccessible to competitors).
- Conservation flats *Grevelingen* with low vegetation of moist dune valleys (calcareous) H2190_B, grey dunes *H2130, Pyrolo-Salicetum H2170 and Liparis loeselii H1903.

**Salt meadows**[42]
- Conservation (Waddenzee) and restoration (Delta) of Atlantic salt meadows (outside of dikes) H1330_A with all succession stages, fresh-saline transitions, diversity in substrate and tides and partly as a flood refuge.
- Conservation of habitat for breeding birds such as the Thalasseus sandvicensis A191 and Sternula albifrons A195, Sterna hirundo A193, Platalea leucorodia A034, foraging area for geese.

**Inner dike saline vegetation**[43]
- Conservation and development of the quality of inner dike brackish areas for Microtus oeconomus arenicola *H1340, breeding birds (Recurvirostra avosetta A132, terns), Transition mires and quaking bogs H7140_B, Atlantic salt meadows (inner dike) H1330_B (e.g. Yerseke Moer), brackish variant of rugged areas and fringes (Epilobium hirsutum) H6430_B and as flood refuge.

**Expected results: other benefits**

The main environmental benefits are improvement of water quality and improved resistance to and resilience with regard to natural calamities like exceptionally heavy storms.
In some of the sea arms, especially in the Eems-Dollard system and in the Grevelingen, the quality of the soil under the waterbody will also be improved.

### E.2.2. Heathlands and shrubs

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

Because implementation of the PAF is based on the site management plans, the allocation of habitat types and species has been adjusted in relation to the proposed classification based on the MAES-categories: under this heading 'Heathlands and shrubs' only the indigenous heathers are considered. The dune heathers (2140, 2150) and dune insects (2160, 2170) are included in the dunes (E.2.7). In addition, the (native) drifting sands (2330) have been included here among the heathlands, because they always occur in combination with heath vegetation. Furthermore, the species of the Habitats Directive and Birds Directive have been adapted in accordance with their occurrence in the biotope in the Netherlands. In values in blue have been added here and were not included in the MAES format.

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H2310 | Dry sand heaths with Calluna and Genista | FV | U2 | U2 | U2 | U2 | = |
| H2320 | Inland crowberry heathland | FV | FV | U1 | U1 | U1 | = |
| H2330 | Sand drifts (Inland dunes with open Corynephorus and Agrostis grasslands) | FV | U1 | U2 | U2 | U2 | = |
| H4010 | Wet heaths | FV | U2 | U1 | U2 | U2 | - |
| H4030 | Dry heaths | FV | U1 | U2 | U2 | U2 | = |

[42] See Natura 2000 targets document, p.71
[43] See Natura 2000 targets document, p.71

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| H5130 | Juniper formations on heaths | FV | FV | U1 | U1 | U1 | = |

*Figure E-4. Habitats - Heathlands and shrubs*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 1076 | Proserpinus proserpina | Teunisbloempijlstaart | FV | FV | FV | FV | FV | + |
| 1166 | Triturus cristatus | Kamsalamander | FV | FV | U1 | U1 | U1 | = |
| 1214 | Rana arvalis | Heikikker | FV | FV | U1 | U1 | U1 | = |
| 1261 | Lacerta agilis | Zandhagedis | FV | FV | U1 | U1 | U1 | + |
| 1283 | Coronella austriaca | Gladde slang | FV | FV | U1 | U1 | U1 | = |
| 6182 | Sympecma paedisca | Noordse winterjuffer | FV | U1 | FV | U1 | U1 | = |
| 6199 | Euplagia quadripunctaria | Spaanse vlag | FV | U1 | U1 | U1 | U1 | - |
| 6284 | Epidalea calamita | Rugstreeppad | FV | U1 | U1 | U1 | U1 | - |
| 6981 | Pelophylax lessonae | Poelkikker | FV | FV | FV | FV | FV | + |

*Figure E-5. Species – Heathlands and shrubs*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A127 | Grus grus | Kraanvogel | P | + | + |
| A224 | Caprimulgus europeus | Nachtzwaluw | B | + | + |
| A233 | Jynx torquilla | Draaihals | B | + | - |
| A246 | Lullula arborea | Boomleeuwerik | B | + | + |
| A255 | Anthus campestris | Duinpieper | B | - | - |
| A276 | Saxicola torquatus | Roodborsttapuit | B | + | + |
| A277 | Oenanthe oenanthe | Tapuit | B | = | - |
| A338 | Lanius collurio | Grauwe Klauwier | B | + | + |
| A876 | Lyrurus tetrix tetrix | Korhoen | B | - | - |

*Figure E-6. Bird species - Heathlands and shrubs*
*Source: article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019:**
Of the six habitat types, four have a very unfavourable conservation status and two are moderately unfavourable. The trends in the state of conservation are stable , only wet heaths (4010) have a negative trend. Inland crowberry heathland (2320) and juniper formations (5130) have the best status: distribution and surface area are sufficient, only the quality is unsatisfactory, and this is expected to remain a problem in the future. For the other habitat types, the structure and function are the most important problem, in wet heaths (4010) the lack of surface area is the decisive factor for the unfavourable assessment.
All six habitat types are highly sensitive to nitrogen deposition.

The outlook of the species is better, the Pelophylax lessonae and the Proserpinus proserpina have a favourable state of conservation. The Proserpinus proserpina is a "new" species advancing from the south. For Triturus

cristatus, Rana arvalis and both reptiles the habitat is not in order yet. Epidalea calamita and Euplagia quadripunctaria have a negative population trend.

There are relatively few bird species bound to heathlands. Within these species extremes can be found in terms of trends: on the one hand there are species that are establishing themselves (Grus grus, Lanius collurio s), on the other hand there are species that are extinct (Anthus campestris) or close to extinction (Lyrurus tetrix tetrix). The other species have either had a positive trend for a long time (Caprimulgus europeus, Lullula arborea and robin wheatear) or are lately in better shape (Jynx torquilla and Oenanthe oenanthe).

**Main pressure factors:**
Nitrogen deposition is reported as a (significant) pressure factor for all habitat types. In addition, almost all habitat types have a polluted soil because of agriculture (leaching of manure). Furthermore, without management almost all habitat types deteriorate, disappear or change to another habitat type (i.e., natural succession is a pressure factor). On the drifting sands (2310 and 2330), the invasive exotic "tank moss" still plays an important role. In these areas, tourism and recreation also cause (limited) pressure on habitat types.
For the HD species, nitrogen deposition is a less important pressure factor. The main pressure factor is habitat fragmentation, followed by changes in hydrology. This is followed by nitrogen, loss of habitat due to building, invasive exotic species, and intensive grazing.
Caprimulgus europeus and Saxicola rubicola do not experience pressure factors, for the other bird species nitrogen is again the most important pressure factor, followed by fragmentation of habitat, use of crop protection products and fertilisation of agricultural land. Dune pipit and rudder also experience pressure from recreation.

**Measures needed to maintain or restore favourable conservation status**

The conservation of heathlands and shrubs habitat types and species requires regular management to prevent succession. In order to limit the negative impact of nitrogen deposition and to improve the conservation status of heathlands and shrubs, restorative measures are necessary, in particular to reduce fertilization, overgrowth and desiccation, but also to allow expansion of habitat types or habitats. In order to implement these measures effectively, plots of land in and around the Natura 2000 site or in the NNN must in most cases be acquired. It is expected that the costs of this will considerably increase, as from 2021 onwards full compensation and expropriation will have to be used more frequently. This is expected as most possibilities that existed for voluntary acquisition on an amicable basis over the last 29 years [1990-2019] have now been used. These are now the last plots of land required to achieve the necessary extension of nature areas for the benefit of N2000 objectives. The farmers who have not yet sold their land have high demands; full compensation or exchange for plots that are as good or better than the land they should sell.

For an explanation of the calculation of the costs see the enclosed report by RHDHV (Annex 7) and the enclosed excel Table (Annex 8) based on information gathered from the 12 provinces.

**Prioritization of measures to be implemented during the next MFF period**

The Table E-11 includes all expected costs for the measures above in the period 2021-2027, based on the current management plans for Natura 2000 areas and the agreements on the realisation of the NNN in the Nature Pact. The measures and their costs can be found in the attached excel Table (see Annex 8). If further substantiation is deemed necessary, we will have to include all N2000/management plans.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen issues
Designation decision updates
Updating management plans

See Table. The N2000-specific conservation and restoration measures (including intensified nitrogen measures and hydrological measures) are laid down in N2000 management plans and/or in PAS area analyses; other

acquisition, design and management measures are recorded per province in the SNL's provincial nature management plans.

N.B.: See also the attached excel Table (Annex 8) in which the measures specifically aimed at N2000 areas can be found. These originate from the N2000 area plans and the PAS area analyses.

*Table E-11[44]. Estimated cost of prioritized measures within Natura 2000 sites - Heath and scrub*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) N2000 specific conservation and restoration measures (including intensified nitrogen measures and hydrological measures) | One-off | - | 4.998.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land | One-off | 1,4 | 10.539.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature | One-off | 1,5 | 1.909.000 | LIFE |
| 4) Regular N2000 management costs based on standard costs and 15% overhead | Annually | 59,6 | 1.829.000 | |
| **Total (annually)** | | | **4.321.286** | |

*Table E-12[45]. Estimated cost of prioritized measures outside Natura 2000 areas - Heath and scrub*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) Specific measures in favour of Natura 2000, outside boundaries | One-off | - | 9.480.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land - within 1 km of Natura 2000 sites | One-off | 2,0 | 15.368.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature - within 1 km of Natura 2000 sites | One-off | 1,6 | 2.059.000 | LIFE |
| 4) Regular management costs based on standard costs - within 1 km of Natura 2000 sites | Annually | 4,9 | 368.000 | |
| 5) Acquisition costs for new nature based on purchase value of agricultural land - not related to Natura 2000 | One-off | 3,3 | 19.071.000 | |
| 6) Establishment costs for new nature based on standard costs per type of nature - not related to Natura 2000 | One-off | 3,6 | 4.093.000 | |
| 7) Regular management costs based on standard costs - not related to Natura 2000 | Annually | 22,4 | 1019.000 | |
| **Total (annually)** | | | **8.540.000** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

To improve the conservation status of species and habitat types of heathlands and shrubs and to improve the status of birds in heathlands and shrubs.

The expected results can be found in the N2000 management plans and in the established PAS area analyses.

The nitrogen measures, in particular the hydrological measures, make the habitat types more moist and more resistant to nitrogen deposition.

**Wet heathlands[46]**

- Quality improvement and enlargement of area of wet heaths H4010 and pioneer vegetation with beaksedge H7150 and active bogs (heathland bogs)*H711 0_B.

[44] See Annex 8: Sheet 'Prov+RWS', H72:H76
[45] See Annex 8: Sheet 'Prov+RWS', H79:H86
[46] See Natura 2000 targets document, p.114-115

**Dry - Dry heaths with small sand drifts and juniper formations**[47]

- Increase in the area of drifting sand heathlands with shrubs H231 0, Inland crowberry heathland H2320, dry heaths H4030 and sand drifts H2330 and improve the quality by increasing the variation in structure and development of gradual transitions with forest, also to the benefit of bird species such as Anthus campestris A255, Lyrurus tetrix tetrix A107, Caprimulgus europeus A224, Jynx torquilla A233 and Oenanthe oenanthe A277
- Connect heathlands and drifting sands for fauna.
- Restore varied habitat for the Lyrurus tetrix tetrix A107 with richly structured heath, sufficient peace and quiet and suitable foraging areas outside the heathlands.
- Preserve area and improve quality of juniper formations H5130, stimulate rejuvenation.

**Dry - Shifting sand landscapes**[48]

- Increase area of varied sand drifts H2330 with transitions to dry heaths and open forests: *Veluwe* (57), *Loonse en Drunense Duinen & Leemkuilen* (131 ), *Drents-Friese Wold & Leggelderveld* (27). Also as habitat of the Jynx torquilla A233, Oenanthe oenanthe A277, Anthus campestris A255 and Caprimulgus europeus A224.

**Expected results: other benefits**

The main environmental benefits of the described measures will be that populations of flying insects will be able to recover which is important because many flying insects function as pollinators for adjacent agricultural areas. Lowering nitrogen deposition in the designated areas will have positive effects on practically all the natural values in the area and on soil and groundwater quality. It is for instance a known fact that acidification of the soil caused by to high levels of $NH_4$-deposition causes toxification of sandy soils by releasing aluminium into the interstitial water.

## E.2.3. Bogs, mires, fens and other wetlands

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

*Because of the implementation of the PAF on the basis of the management plans of the sites, the allocation of habitat types and species has been adjusted in relation to the proposed classification based on the MAES categories: the dune valleys (2190) are included in the dunes (E.2.7). Furthermore, the species of the Habitat Directive and birds have been adapted in accordance with their occurrence in the biotope in the Netherlands. In blue values added here relative to the MAES format.*

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H7110 | Active raised bogs | U2 | U2 | U2 | U2 | U2 | = |
| H7120 | Degraded raised bogs (still capable of natural regeneration) | FV | FV | U2 | U2 | U2 | - |
| H7140 | Transition mires and quaking bogs | U1 | U1 | U2 | U2 | U2 | - |
| H7150 | Pioneer vegetation with beaksedges | FV | FV | U1 | U1 | U1 | = |
| H7210 | Calcareous fens with Cladium Mariscus (and species of the Caricion Davallianae) | FV | FV | U1 | U1 | U1 | = |
| H7220 | Petrifying springs with tufa formation (Cratoneurion) | FV | FV | U1 | U2 | U2 | - |
| H7230 | Alkaline fens | U2 | U2 | U2 | U2 | U2 | + |

*Figure E-7. Habitats - Bogs, mires, fens and other wetlands*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

[47] See Natura 2000 targets document, p.115
[48] See Natura 2000 targets document, p.115

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 1166 | Triturus cristatus | Kamsalamander | FV | FV | U1 | U1 | U1 | = |
| 1214 | Rana arvalis | Heikikker | FV | FV | U1 | U1 | U1 | = |
| 6284 | Epidalea calamita | Rugstreeppad | FV | U1 | U1 | U1 | U1 | - |
| 1037 | Ophiogomphus cecilia | Gaffellibel | FV | U1 | U1 | U1 | U1 | = |
| 1038 | Leucorrhinia albifrons | Oostelijke witsnuitlibel | U2 | U2 | U2 | U2 | U2 | - |
| 1042 | Leucorrhinia pectoralis | Gevlekte witsnuitlibel | FV | U1 | FV | FV | U1 | = |
| 1048 | Aeshna viridis | Groene glazenmaker | FV | U1 | U1 | U1 | U1 | - |
| 1060 | Lycaena dispar | Grote vuurvlinder | U2 | U2 | U2 | U2 | U2 | = |
| 6182 | Sympecma paedisca | Noordse winterjuffer | FV | U1 | FV | U1 | U1 | = |
| 1312 | Nyctalus noctula | Rosse vleermuis | FV | U2 | XX | XX | U2 | x |
| 1322 | Myotis nattereri | Franjestaart | FV | FV | FV | FV | FV | + |
| 1330 | Myotis mystacinus | Baardvleermuis | FV | U1 | XX | U1 | U1 | x |
| 1340 | Microtus oeconomus arenicola | Noordse Woelmuis | U2 | U1 | U1 | U2 | U2 | - |
| 1355 | Lutra lutra | Otter | U1 | U1 | U1 | FV | U1 | + |
| 1014 | Vertigo angustior | Nauwe korfslak | U1 | U2 | U1 | U2 | U2 | - |
| 1016 | Vertigo moulinsiana | Zeggekorfslak | FV | FV | U1 | U1 | U1 | x |
| 4056 | Anisus vorticulus | Platte schijfhoren | U2 | U1 | U1 | U2 | U2 | - |
| 6216 | Hamatocaulis vernicosus | Geel schorpioenmos | FV | U1 | U1 | U1 | U1 | + |
| 1903 | Liparis loeselii | Groenknolorchis | FV | FV | FV | FV | FV | = |

*Figure E-8. Species - Bogs, mires, fens and other wetlands*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A004 | Tachybaptus ruficollis | Dodaars | B | = | + |
| A008 | Podiceps nigricollis | Geoorde Fuut | B | = | + |
| A021 | Botaurus stellaris | Roerdomp | B | + | + |
| A022 | Ixobrychus minutus | Woudaap | B | - | - |
| A023 | Nycticorax nycticorax | Kwak | B | = | + |
| A026 | Egretta garzetta | Kleine Zilverreiger | B | - | + |
| A029 | Ardea purpurea | Purperreiger | B | + | + |
| A034 | Platalea leucorodia | Lepelaar | B | + | + |
| A081 | Circus aeruginosus | Bruine Kiekendief | B | - | - |
| A119 | Porzana porzana | Porseleinhoen | B | = | - |
| A122 | Crex crex | Kwartelkoning | B | - | + |
| A127 | Grus grus | Kraanvogel | B | + | + |
| A153 | Gallinago gallinago | Watersnip | B | = | - |
| A197 | Chlidonias niger | Zwarte Stern | B | = | - |

| | | | | | |
|---|---|---|---|---|---|
| A292 | Locustella luscinioides | Snor | B | + | = |
| A295 | Acrocephalus schoenobaenus | Rietzanger | B | + | + |
| A298 | Acrocephalus arundinaceus | Grote Karekiet | B | - | - |
| A391 | Phalacrocorax carbo sinensis | Aalscholver | B | = | + |
| A480 | Cyanecula svecica | Blauwborst | B | + | + |
| A773 | Ardea alba | Grote Zilverreiger | B | + | + |
| A034 | Platalea leucorodia | Lepelaar | P | + | + |
| A094 | Pandion haliaetus | Visarend | P | = | = |
| A857 | Spatula clypeata | Slobeend | P | + | + |
| A861 | Calidris pugnax | Kemphaan | P | - | - |
| A052 | Anas crecca | Wintertaling | W | + | = |
| A054 | Anas acuta | Pijlstaart | W | ? | = |
| A075 | Haliaeetus albicilla | Zeearend | W | + | + |
| A156 | Limosa limosa | Grutto | W | ? | = |

*Figure E-9. Bird species - Bogs, mires, fens and other wetlands*
*Source: article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019:**

Of the 7 habitat types, 5 are in very unfavourable conservation status, with a negative tendency in most cases, and two are in moderately unfavourable conservation status. Of restoring raised bogs (7120), pioneer vegetations with beaks edges (7150), calcareous fens with Cladium Mariscus (7210) and springs with tufa formation (7220) are favourable in terms of distribution and surface area. For all habitat types, the total conservation status corresponds to the assessment of structure and function. The springs with tufa formation (7220) are very unfavourable because of an unfavourable perspective due to the expected quality decline of the habitat type. Pioneer vegetations with beaks edges (7150) and calcareous fens with Cladium Mariscus (7210) are sensitive to nitrogen deposition, the other habitat types are very sensitive.

Of the 20 coupled species, two are favourable: the Liparis loeselii and the Myotis nattereri. In the case of the Liparis loeselii, the occurrence is also largely outside the "peatlands" according to the habitat types (namely in the dunes).
Furthermore, this biotope contains the only two endemic (sub)species for the Netherlands: the rare Lycaena dispar and the Microtus oeconomus arenicola. Both species have a very unfavourable status due to their limited distribution. The only known population of the European rare Leucorrhinia albifrons in the Netherlands disappeared recently, making the species extinct in the Netherlands. The status of the Vertigo angustior is very unfavourable, but the vast majority of the occurrence of this species lies in the dunes. The Lutra lutra is a relatively new species in the Netherlands. The species was reintroduced in 2002 and has been growing steadily since then, thanks to measures to improve water quality and defragmentation. Therefore the assessment is still moderately unfavourable, but the prospects for the future are good. For most other Habitats Directive species the habitat is not yet in order.

**Birds**

The birds of the wetlands generally have a positive conservation status with many positive and stable trends. Four species are still declining since the Birds Directive came into force. The Ixobrychus minutus, Acrocephalus arundinaceus and Calidris pugnax have been declining since the 1960s. In addition to deteriorating biotope quality at the breeding sites, the Ixobrychus minutus probably also suffers high mortality during migration and hibernation. The Circus aeruginosus has increased since the 1960's after the banning of dangerous pesticides and decreased persecution, but the deterioration of the habitat is now also affecting this species, so that numbers are again lower than in the early 1980s. Species such as Porzana porzana, Gallinago gallinago and Chlidonias niger respond well to measures taken and show an improvement. Egretta garzetta and Crex crex, on the other hand, are declining lately after an a long period of growth. The Egretta garzetta did not yet come to the Netherlands

when the Birds Directive came into force; the species reacts strongly to harsher winters. The Crex crex did not withstand the intensification of agriculture, but the population increase in the 1990s is probably due to changes in agriculture in Eastern Europe. This population is now collapsing again.

**Main pressure factors**

The most important pressure factor reported for the habitat types and (bird) species of bogs, mires, fens and other wetlands is the extraction of water from the areas. This occurs through groundwater and/or surface water, or otherwise changing the hydrology of the area and polluting water. In addition, almost all habitat types and Habitat Directive species are subject to deterioration without management (i.e. natural succession is a pressure factor). Other known pressure factors are related to nitrogen deposition and fertilisation. For Habitat Directive species, fragmentation also plays an important role and, as in the case of birds, the use of crop protection agents. In addition, for 11 bird species it was reported that there are no pressure factors.

**Measures needed to maintain or restore favourable conservation status**

The conservation of the habitat types and species of bogs, mires, fens and other wetlands requires regular management to prevent succession. In order to limit the negative impact of nitrogen deposition and to improve the conservation status of peat habitat types, restorative measures are necessary, in particular to reduce eutrophication, attenuation and desiccation, but also to allow expansion of habitat types or habitats. In order to implement these measures effectively, plots of land in and around the Natura 2000 site or in the NNN must (in most cases) be purchased. It is expected that the costs of this will increase considerably because from 2021 onwards full compensation and expropriation is required more. In addition to nitrogen deposition through the atmosphere, the influence of nitrate from inflowing groundwater from agricultural sites is disastrous when it reaches source and seepage areas. For springs with tufa formation and Alkaline fens in the South of *Limburg*, among others, this seriously impairs the value of nature. In order to reverse the influx of groundwater with too high NO3 concentration, a range of measures is required in the agricultural businesses in source and seepage areas. The aim is for agriculture to switch to circular agriculture in which all or almost all of the fertiliser applied to agricultural plots is absorbed by the agricultural crop.

This requires high investment for areas outside the wet N2000 sites, mentioned on the 1st row Table E-13.

**Prioritization of measures to be implemented during the next MFF period**

Table E-13 includes all expected costs for the measures above in the period 2021-2027, based on the current management plans for Natura 2000 areas and the agreements on the realisation of the NNN in the Nature Pact.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen problems
Updating designation decisions
Updating management plans

See Table E-13. The N2000-specific conservation and restoration measures (including intensified nitrogen measures and hydrological measures) are laid down in N2000 management plans and/or in PAS area analyses; the other acquisition, design and management measures are laid down per province in SNL's provincial nature management plans.

*Table E-13[49]. Estimated cost of prioritized measures within Natura 2000 sites - Bogs, mires, fens and other wetlands*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) N2000 specific conservation and restoration measures (including intensified nitrogen measures and hydrological measures) | One-off | - | 75.123.000 | LIFE |
| 2) Acquisition costs of new nature based on purchase value of agricultural land | One-off | 1,7 | 12.387.000 | |

[49] See Annex 8: Sheet 'Prov+RWS', H91:H95

| | | | | |
|---|---|---|---|---|
| 3) Establishment costs for new nature based on standard costs per type of nature | One-off | 1,8 | 3.318.000 | LIFE |
| 4) Regular N2000 management costs based on standard costs | Annually | 42,0 | 3.018.000 | |
| **Total (annually)** | | | **15.993.429** | |

*Table E-14[50]. Estimated cost of prioritized measures outside Natura 2000 sites - Bogs, mires, fens and other wetlands*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) Specific measures in favour of Natura 2000, outside boundaries | One-off | - | 18.011.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land - within 1 km of Natura 2000 sites | One-off | 2,4 | 17.554.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature - within 1 km of Natura 2000 sites | One-off | 1,9 | 3.414.000 | LIFE |
| 4) Regular management costs based on standard costs - within 1 km of Natura 2000 sites | Annually | 7,0 | 582.000 | |
| 5) Acquisition costs for new nature based on purchase value of agricultural land - not related to Natura 2000 | One-off | 3,6 | 20.694.000 | |
| 6) Establishment costs for new nature based on standard costs per type of nature - not related to Natura 2000 | One-off | 4,0 | 6.160.000 | |
| 7) Regular management costs based on standard costs - not related to Natura 2000 | Annually | 18,1 | 1.301.000 | |
| **Total (annually)** | | | **11.287.714** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

Improve the conservation status of European protected species and habitat types of bogs, mires, fens and other wetlands and improve the status of birds in these sites.

Sod removing is used for habitat types H6410 Molinia meadows, H7140A transition mires and quaking bogs H7140B. Sod removing removes the acidified top layer. At the same time as the sod removing, a number of ditches will be reopened to improve the throughput of surface water.

The expected results can be found in the N2000 management plans and in the established PAS area analyses.

**Fen - Marshes[51]**

- All succession stages of fens are represented: Transition mires and quaking bogs H7140_A and H7140_B including Lycaena dispar H1060, Liparis loeselii H1903 and wet heaths (fens) H4010_B, Molinia meadows H6410, calcareous fens with Cladium Mariscus *H7210 and bog woodland H91D0, in conjunction with open water communities.
- Flooded areas for Mareca penelopes A050 and breeding birds such as Porzana porzana A119 and Calidris pugnax A151, Crex crex A122 and Microtus oeconomus arenicola *H1340.

- Restoration of large areas of perennial reed, including water reed, by restoring natural bearing dynamics and preventing desiccation for reed-bog birds, such as the Botaurus stellaris A021, Ardea purpurea A029, Locustella luscinioides A292, Acrocephalus arundinaceus A298 and for the Microtus oeconomus arenicola *H1340.
- Conservation and recovery of brackish variant of rough areas (Epilobium hirsutum) H6430_B in the fen areas above the IJ, partly as habitat for the Microtus oeconomus arenicola *H1340. Preserve bog woodland H91D0.

**Brook valley grasslands and peatland vegetation[52]**

- Restore quality and extension of alkaline fens H7230 and Transition mires and quaking bogs H7140_A, in mosaic with poor grasslands.

[50] See Annex 8: Sheet 'Prov+RWS', H98:H105
[51] See Natura 2000 targets document, p.98
[52] See Natura 2000 targets document, p.106

- Enlargement and improvement of the habitat quality of the Maculinea teleius H1059 and Maculine nausithous H1061.

**Wet - Mires**[53]

- Quality improvement of active raised bogs (mires) *H7110_B in heathlands and forests.

**Remains of bog landscape: the large peat bogs** [54]

- Expansion of active raised bogs (bog landscape) *H7110_A.
- Initiation or continuation of peat formation in recovering bogs H7120 in promising situations, with a view to development of active raised bogs (bog landscape) *H7110_A (where necessary extension of area H7120). Preservation of current relicts as source populations of fauna. Restoration of large peat bogs with sufficient peace for, among others, the non-breeding Grus grus A127.
- Development of transition zones of active raised bogs (bog landscape) *H710_A.

**Fens in sand covered landscapes**[55]

- Improvement quality recovering raised bogs H7120 with a view to development of active raised bogs (bog landscape) *H7110_A.
- Recovery of peripheral areas of recovering raised bogs H7120 with e.g. bog woodland *H91D0, acidic mires H3160, calcareous fens with Cladium Mariscus *H7210.
- Rehabilitation transitions to brook valleys and higher sandy grounds. Connection to wet heaths H4010, poor heather grasslands *H6230, bog woodland *H91D0, calcareous fens with Cladium Mariscus *H7210, Molinia meadows H6410.

**Expected results: other benefits**

The main environmental benefits of the described measures will be that populations of flying insects will be able to recover which is important because many flying insects function as pollinators for adjacent agricultural areas. Lowering nitrogen deposition in the designated areas will have positive effects on practically all the natural values in the area, not only in the fens and mires but also in the surrounding woods and natural grasslands and on soil and groundwater quality. With respect to groundwater quality: it is a known fact that acidification of the soil caused by to high levels of NH4-deposition causes toxification of sandy soils by releasing aluminium into the interstitial water.

Another important measure in many areas with fens and mires is restoring groundwater tables to a more natural level. This has positive environmental effects on the groundwater levels in the surrounding areas that suffer from drought in summertime; the Nature2000-areas function as water storage areas (“klimaatbuffers”). The felling of coniferous tree plantations (once planted for production of stilts used in coalmines) in the protected fen and mire-areas helps to raise the groundwater table.

### E.2.4. Grasslands

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

*Due to the implementation of the PAF based on the sites' management plans, the allocation of habitat types and species was adjusted in relation to the proposed classification based on the MAES categories: The Schorren and Atlantic salt meadows (1330) are included in marine and coastal areas (E.2.1), dune grasslands (2130) dunes (E.2.7) and sand drifts (2330) and heathlands (E2.2). Furthermore, the species of the Habitat Directive and birds have been adapted in accordance with their occurrence in the biotope in the Netherlands. This is based on occurrence in both semi-natural and agricultural grassland areas, which is why the so-called "polder fish" (Cobitis taenia Complex and Rhodeus amarus) have been added. Furthermore, Bombina variegata and Alytes obstetricans*

[53] See Natura 2000 targets document, p.114
[54] See Natura 2000 targets document, p.124
[55] See Natura 2000 targets document, p.125

*are (only) included here, because in the Netherlands they only occur in pools in grasslands and quarries in South Limburg. In blue values added here relative to the MAES format.*

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H6110 | Pioneer vegetation on rocky ground | FV | U2 | U1 | U2 | U2 | + |
| H6120 | Xeric sand calcareous grasslands | U2 | U2 | U2 | U2 | U2 | - |
| H6130 | Zinc meadows | U2 | U2 | U2 | U2 | U2 | x |
| H6210 | Lime grasslands | FV | U2 | U2 | U2 | U2 | + |
| H6230 | Poor heather grasslands | U1 | U2 | U2 | U2 | U2 | - |
| H6410 | Molinia meadows (on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)) | FV | U2 | U1 | U1 | U2 | = |
| H6430 | Rugged areas and fringes | FV | FV | U1 | XX | U1 | = |
| H6510 | Arrhenatherum elatius and Alopecurus hay meadows | FV | U2 | U2 | U2 | U2 | = |

*Figure E-10. Habitats - Grasslands*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 1059 | Maculinea teleius | Pimpernelblauwtje | U2 | U2 | U2 | U2 | U2 | - |
| 1061 | Maculine nausithous | Donker pimpernelblauwtje | U2 | U2 | U2 | U2 | U2 | + |
| 1076 | Proserpinus proserpina | Teunisbloempijlstaart | FV | FV | FV | FV | FV | + |
| 6199 | Euplagia quadripunctaria | Spaanse vlag | FV | U1 | U1 | U1 | U1 | - |
| 1166 | Triturus cristatus | Kamsalamander | FV | FV | U1 | U1 | U1 | = |
| 1191 | Alytes obstetricans | Vroedmeesterpad | FV | U2 | U2 | U2 | U2 | = |
| 1193 | Bombina variegata | Geelbuikvuurpad | FV | U2 | U2 | U2 | U2 | + |
| 1197 | Pelobates fuscus | Knoflookpad | FV | U1 | U2 | U2 | U2 | + |
| 6981 | Pelophylax lessonae | Poelkikker | FV | FV | FV | FV | FV | = |
| 5339 | Rhodeus amarus | Bittervoorn | FV | FV | FV | FV | FV | + |
| 6963 | Cobitis taenia | Kleine modderkruiper | FV | FV | FV | FV | FV | = |
| 1321 | Myotis emarginatus | Ingekorven vleermuis | XX | FV | U2 | U2 | U2 | x |
| 1324 | Myotis myotis | Vale vleermuis | XX | FV | XX | XX | XX | x |
| 1327 | Eptesicus serotinus | Laatvlieger | XX | U1 | XX | U1 | U1 | x |
| 1340 | Microtus oeconomus arenicola | Noordse woelmuis | U2 | U1 | U1 | U2 | U2 | - |
| 1614 | Apium repens | Kruipend moerasscherm | FV | U2 | U2 | U2 | U2 | - |

*Figure E-11. Species - Grasslands*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A037 | Cygnus columbianus bewickii | Kleine Zwaan | W | - | + |
| A038 | Cygnus cygnus | Wilde Zwaan | W | ? | + |
| A040-A | Anser brachyrhynchus | Kleine Rietgans | W | - | - |
| A042 | Anser erythropus | Dwerggans | W | ? | + |
| A043 | Anser anser | Grauwe Gans | W | + | + |
| A045-C | Branta leucopsis | Brandgans | W | + | + |
| A140 | Pluvialis apricaria | Goudplevier | W | = | = |
| A142 | Vanellus vanellus | Kievit | W | = | + |
| A153 | Gallinago gallinago | Watersnip | B | = | - |
| A197 | Chlidonias niger | Zwarte Stern | B | = | - |
| A275 | Saxicola rubetra | Paapje | B | - | - |
| A394 | Anser albifrons albifrons | Kolgans | W | = | + |
| A701 | Anser fabalis fabalis | Taigarietgans | W | - | - |
| A702 | Anser fabalis rossicus | Toendrarietgans | W | = | + |
| A768 | Numenius arquata arquata | Wulp | W | = | + |
| A773 | Ardea alba | Grote Zilverreiger | W | + | + |
| A855 | Mareca penelope | Smient | W | = | + |
| A861 | Calidris pugnax | Kemphaan | B | ? | - |

*Figure E-12. Bird species - Grasslands*
*Source: Article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019**

All but one of the 8 concerned habitat types are in a very poor conservation status. Only the much rougher type 6510 is moderately unfavourable. Five habitat types score very unfavourable on all fronts, of the Arrhenatherum elatius (6510) only the distribution area is moderately unfavourable. In pioneer vegetation on rocky ground (6110) and Sesleria albicans (6410), the fact that there is far too little surface area is the decisive reason for a very unfavourable state, structure and function in these habitat types is moderately unfavourable.
More than half of the grasslands are sensitive to nitrogen deposition (6110, 6210, 6430 (forest edge subtype) and 6510), the other three habitat types are very sensitive to nitrogen deposition.

Very rare species in the Netherlands that depend on grasslands are the two Maculinea teleius (6510) and three small toad species. Furthermore, the Myotis emarginatus (with only one colony in the Netherlands, foraging in small-scale landscapes), the Microtus oeconomus arenicola (particularly susceptible to displacement by other mouse species) and Apium repens (with the main resistant populations in Zeeuws-Vlaanderen) were also assessed as very unfavourable. The frog species and *polder fish* in the agricultural area and the new species of Proserpinus proserpina are doing well in the Netherlands.

The prospects of the birds in grasslands is slightly less positive than for other ecotopes. Many positive long-term trends have levelled off to stable. Wintering Cygnus columbianus bewickiis have even diminished. This is a consequence of climate change, as is the continuing decline of the Anser brachyrhynchus: the birds now winter more to the north. On the other hand, many negative long-term trends were also reversed, only wintering Anser brachyrhynchus and Anser fabalis fabalis and Saxicola rubetra will continue to decline. Species that continue to grow are wintering Anser anser, Branta leucopsis and Ardea alba.

**Main pressure factors**

The most important pressure factors reported for grassland habitat types are succession and the lack of good (regular) management, resulting in the threat of roughening and overgrowth. Other important pressure factors relate to nitrogen deposition, in particular from agriculture, and hydrology. For the (bird) species, the use of plant protection products, grassland management including fertilisation and changes in the hydrological situation are frequently mentioned as pressure factors. For the - rare - toads and the Pelophylax lessonae the threat of the rana virus is also important. For one third of the birds no pressure factors are reported.

**Measures needed to maintain or restore favourable conservation status**

Conservation of habitat types and species of grasslands requires regular management to prevent succession. In order to limit the negative impact of nitrogen deposition and to improve the conservation status of grasslands, recovery measures are necessary, in particular to reduce eutrophication, attenuation and desiccation, but also to allow expansion of habitat types or habitats. In order to implement these measures effectively, in most cases plots of land in and around the Natura 2000 site or in the NNN must be purchased. It is expected that the costs of this will increase considerably because from 2021 onwards full compensation and expropriation will have to be used more often.

**Prioritization of measures to be implemented during the next MFF period**

Table E-15 includes all expected costs for the measures above in the period 2021-2027, based on the current management plans for Natura 2000 areas and the agreements on the realisation of the NNN in the Nature Pact.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen problems
Updating designation decisions
Updating management plans

See Table E-15. The N2000-specific conservation and recovery measures (including intensified nitrogen measures and hydrological measures) are laid down in N2000 management plans and/or in PAS area analyses; the other acquisition, design and management measures are laid down per province SNL's provincial nature management plans.

*Table E-15[56]. Estimated cost prioritized measures within Natura 2000 sites - Grasslands*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) N2000 specific conservation and recovery measures (including intensified nitrogen measures and hydrological measures) | One-off | - | 21.003.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land | One-off | 3,8 | 26.760.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature | One-off | 4,2 | 4.440.000 | LIFE |
| 4) Regular N2000 management costs based on standard costs | Annually | 80,7 | 5.454.000 | |
| **Total (annually)** | | | **12.911.571** | |

*Table E-16[57]. Estimated cost prioritized measures outside Natura 2000 sites - Grasslands*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) Specific measures in favour of Natura 2000, outside boundaries | One-off | - | 4.866.000 | LIFE |

[56] See Annex 8: Sheet 'Prov+RWS', H110:H114
[57] See Annex 8: Sheet 'Prov+RWS', H117:H125

| | | | | |
|---|---|---|---|---|
| 2) Acquisition costs for new nature based on purchase value of agricultural land - within 1 km of Natura 2000 sites | One-off | 4,0 | 30.412.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature - within 1 km of Natura 2000 sites | One-off | 3,7 | 4.018.000 | LIFE |
| 4) Regular management costs based on standard costs - within 1 km of Natura 2000 sites | Annually | 36,5 | 2.384.000 | |
| 5) Acquisition costs for new nature based on purchase value of agricultural land - not related to Natura 2000 | One-off | 8,3 | 49.702.000 | |
| 6) Establishment costs for new nature based on standard costs per type of nature - not related to Natura 2000 | One-off | 9,1 | 10.798.000 | |
| 7) Regular management costs based on standard costs - not related to Natura 2000 | Annually | 109,8 | 6.840.000 | |
| 8) Subsidy scheme for agricultural nature management[58] | Annually | 860,26 | 43.712.137 | EAFRD |
| **total** | | | **43.735.618** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

Improve the conservation status of grassland species and habitat types and improve the status of grassland birds. The expected results can be found in the N2000 management plans and in the established PAS area analyses.

**Fens - Grasslands**

- Recovery inundation, conservation and regeneration of Molinia meadows H6410, Arrhenatherum elatius and Alopecurus hay meadows (large Alopecurus ) H6510_B, in particular Fritillaria meleagris hay meadows, also habitat of Calidris pugnax A151 and Gallinago gallinago A153.
- Sufficient moulting and resting areas for water birds such as Podiceps cristatus A005, geese, Spatula clypeata A056 and Aythya fuligula A061.

**Low lying floodplains (including former floodplains)[59]**

- Restore Arrhenatherum elatius and Alopecurus meadows (large Alopecurus) H6510_B and Molinia meadows H6410.

**High lying floodplains (including former floodplains)[60]**

- Quality improvement and expansion of Xeric sand calcareous grasslands *H6120, shiny oats and Alopecurus meadows (Arrhenatherum elatius) H6510_A.

**Xeric sand calcareous grasslands and peat bog forming vegetation[61]**

- Restoration quality and extension of poor heather grasslands *H6230 and Molinia meadows H6410.
- Development of small-scale mosaics of heath meadows *H6230 and Molinia meadows H6410 with other Xeric sand calcareous grasslands and with wet heaths (higher sandy soils) H4010_A on the floodplain flank for herpetofauna and insects.

**Wetlands[62]**

- Quality improvement and (if possible) area expansion of poor heather grasslands *H6230 and Molinia meadows H6410 in promising situations (on poor loam sandy grounds).

**Remains of raised bogs: the large peat bogs[63]**

- Conservation and, where possible, restoration of poor heather grasslands *H6230, also important for Saxicola rubetra A275 and Lanius collurio A338.

**Slopes - Dry slopes with small-scale mosaic of poor grasslands and dry valleys[64]**

- Maintain and extend mosaic of pioneer vegetation on rocky ground *H611 018, lime grasslands *H6210, poor

[58] See Annex 6 for the calculation of the target value and of the estimated costs
[59] See Natura 2000 targets document, p.89
[60] See Natura 2000 targets document, p.90
[61] See Natura 2000 targets document, p.106
[62] See Natura 2000 targets document, p.114-115
[63] See Natura 2000 targets document, p.124
[64] See Natura 2000 targets document, p.133

heather grasslands *H6230.
- Increase habitat and increase number and size of viable Bombina variegata populations H11 93.

**Slopes – Sloped forests, shrubs and fringes**[65]
- Conserve existing sloping forest and restore varied vegetation structure of oak-hornbeam forests (hilly) H9160_B, softened forest edge, rugged areas and fringes (dry forest edges) H6430_C and where relevant increase habitat of Lucanus cervus H1083 and/or Euplagia quadripunctaria *H1078.

**Brook valleys - Grasslands and source areas**[66]
- Preservation and extension of marshy source areas (with alkaline fens H7230) through recovering hydrology; concerns both groundwater flows and the level and morphodynamics of brook courses.
- Restore zinc meadows *H6130 by targeted management measures (acidification and reduction of eutrophication).
- Preservation and extension of moist alluvial forests (brook-supporting forests) *H91E0_C and lime tuff sources *H7220 by restoring hydrology; concerns groundwater flows as well as the level and morphodynamics of brook courses.
- Increase in the number and size of viable populations of the Vertigo moulinsiana H1016.

**Quarries - Open quarries**[67]
- Development of mosaic of pioneer vegetation on rocky ground *H6110 and lime grasslands *H6210.
- Conservation of suitable habitat for viable Bombina variegata populations H1193.

**Expected results: other benefits**

The main environmental benefits of the described measures will be:

a) The populations of flying insects will be able to recover which is important because many flying insects function as pollinators for adjacent agricultural areas.

b) Lowering nitrogen deposition in the designated areas will have positive effects on practically all the natural values in the area and on soil and groundwater quality. It is e.g. a known fact that acidification of the soil caused by high levels of NH4-deposition causes toxification of sandy soils by releasing aluminium into the interstitial water.

c) Restoration of groundwater levels in areas with wet grasslands will often have a positive effect in surrounding areas because more groundwater will be available during the longer summer drought periods (occurring as part of the climate change).

## E.2.5 Other agro-ecosystems (including croplands)

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

No habitat types occurring in the Netherlands are linked to 'other agro-ecosystems'. The species of the Habitat Directive and birds adapted to the biotope in the Netherlands are listed in the following table.

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 1197 | Pelobates fuscus | Knoflookpad | FV | U1 | U2 | U2 | U2 | + |
| 1321 | Myotis emarginatus | Ingekorven vleermuis | XX | FV | U2 | U2 | U2 | X |

[65] See Natura 2000 targets document, p.133
[66] See Natura 2000 targets document, p.134
[67] See Natura 2000 targets document, p.134

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1339 | Cricetus cricetus | Hamster | U2 | U2 | U2 | U2 | U2 | - |
| 6284 | Epidalea calamita | Rugstreeppad | FV | U1 | U1 | U1 | U1 | - |

*Figure E-13 Species - Other agricultural ecosystems (including cropland)*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A084 | Circus pygargus | Grauwe Kiekendief | B | = | + |
| A037 | Cygnus columbianus bewickii | Kleine Zwaan | W | - | + |
| A702 | Anser fabalis rossicus | Toendrarietgans | W | = | + |

*Figure E-14. Bird species - Other agricultural ecosystems (including croplands)*
*Source: Article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019**

The only Habitat Directive species that is completely dependent on agricultural land is the Cricetus cricetus. The Cricetus cricetus was almost extinct and was reintroduced in 2002. This reintroduction is still unsuccessful, the population is not yet able to expand independently. The Circus aeruginosus is a species that has increased considerably over the long term, this increase is now levelling off. The decline of wintering small swans is mainly due to climate change.

**Main pressure factors**

The pressure factors reported as most important are change in land use, conversion of agricultural land into buildings, use of plant protection products and for the non-flying species fragmentation due to roads etc.

**Measures needed to maintain or restore favourable conservation status**

Regular (agricultural) management is needed for the conservation of species from other agricultural systems. Improving the conservation status of species from other agricultural systems requires remedial measures to improve quality, but also to allow habitat expansion. In order to implement these measures effectively, in many cases plots of land in and around the Natura 2000 area or in the NNN must be purchased. It is expected that the costs of this will increase considerably because from 2021 onwards full compensation and expropriation will have to be used much more.

**Prioritization of measures to be implemented during the next MFF period**

Table E-17 includes all the costs expected to be needed for the above measures in the period 2021-2027, based on the agreements on N2000, acquisition, development, nature management and agricultural nature management in the nature pact.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen problems
Updating designation decisions
Updating management plans

See Table E-17. It concerns both acquisition and design as well as subsidised agricultural nature management.

The N2000-specific conservation and restoration measures (including intensified nitrogen measures and hydrological measures) are laid down in N2000 management plans and/or in PAS area analyses; the other acquisition, design and management measures are laid down per province in SNL's provincial nature management plans.

*Table E-17[68]. Estimated cost of prioritized measures within Natura 2000 sites - Other agricultural ecosystems (including croplands)*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) N2000 specific conservation and recovery measures (including intensified nitrogen measures and hydrological measures) | One-off | - | 44.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land | One-off | 5,0 | 34.783.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature | One-off | 5,3 | 2.695.000 | Life |
| 4) Regular N2000 management costs based on standard costs | Annually | 8,3 | 2.498.000 | |
| **Total (annually)** | | | 7.858.286 | |

*Table E-18[69]. Estimated cost Priority actions outside Natura 2000 sites - Other agricultural ecosystems (including croplands)*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) Specific measures in favour of Natura 2000, outside boundaries | One-off | - | 897.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land - within 1 km of Natura 2000 sites | One-off | 3,3 | 23.511.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature - within 1 km of Natura 2000 sites | One-off | 2,9 | 2.116.000 | Life |
| 4) Regular management costs based on standard costs - within 1 km of Natura 2000 sites | Annually | 6,0 | 3.083.000 | |
| 5) Acquisition costs for new nature based on purchase value of agricultural land - not related to Natura 2000 | One-off | 8,2 | 43.454.000 | |
| 6) Establishment costs for new nature based on standard costs per type of nature - not related to Natura 2000 | One-off | 8,9 | 5.367.000 | |
| 7) Regular management costs based on standard costs - not related to Natura 2000 | Annually | 18,2 | 6.438.000 | |
| 8) Subsidy scheme for agricultural nature management[70] | Annually | 52,46 | 15.706.588 | EAFRD |
| **Total (annually)** | | | 35.991.159 | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

Improve the conservation status of species and improve the status of birds from other agricultural systems.

A small part of the desired results have been laid down in N2000 management plans and the rest in the provincial SNL nature management plans.

**Expected results: other benefits**

The environmental benefits of the described measures will be:

a) Considerable reduction of pollution of soils and groundwater with fertilizers, pest control substances and with crop protection products.
b) Increase of groundwater tables and increase of groundwater storage.
c) Increase of the populations of pollinators.
d) Increase of the agricultural surface with tranquillity and with attractive landscape features.

## E.2.6. Woodlands and forests

[68] See Annex 8: Sheet 'Prov+RWS', H130:H134
[69] See Annex 8: Sheet 'Prov+RWS', H137:H145
[70] See Annex 6 for the calculation of the target value and of the estimated costs

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

*Because of the implementation of the PAF on the basis of the management plans of the areas, the allocation of habitat types and species has been adjusted in relation to the proposed classification on the basis of the MAES categories: under this heading 'Forests' only the indigenous forests are considered, the dune forests (2180) are included in the dunes (E.2.7). Furthermore, the species of the Habitat Directive and birds have been adapted in accordance with their occurrence in the biotope in the Netherlands. In blue values added here relative to the MAES format.*

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H9110 | Luzulo-Fagetum beech forests | FV | FV | U1 | U1 | U1 | = |
| H9120 | Beech-oak forests with holly | FV | U1 | U1 | U1 | U1 | + |
| H9160 | Oak-hornbeam forests | FV | U1 | U2 | U2 | U2 | + |
| H9190 | Old oak forests | FV | U1 | U2 | U2 | U2 | - |
| H91D0 | Bog woodlands | FV | U1 | U2 | U2 | U2 | = |
| H91E0 | Alluvial forests (with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)) | FV | U1 | U1 | U1 | U1 | x |
| H91F0 | Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris) | U1 | U2 | U2 | U2 | U2 | - |

*Figure E-15. Habitats - Woodlands and forests*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 1016 | Vertigo moulinsiana | Zeggekorfslak | FV | FV | U1 | U1 | U1 | x |
| 1037 | Ophiogomphus cecilia | Gaffellibel | FV | U1 | U1 | U1 | U1 | = |
| 1076 | Proserpinus proserpina | Teunisbloempijlstaart | FV | FV | FV | FV | FV | + |
| 1083 | Lucanus cervus | Vliegend hert | U2 | XX | XX | U2 | U2 | = |
| 1203 | Hyla arborea | Boomkikker | FV | FV | U1 | U1 | U1 | + |
| 1283 | Coronella austriaca | Gladde slang | FV | FV | U1 | U1 | U1 | = |
| 1309 | Pipistrellus pipistrellus | Gewone dwergvleermuis | FV | XX | XX | XX | XX | x |
| 1314 | Myotis daubentonii | Watervleermuis | FV | FV | XX | FV | FV | = |
| 1317 | Pipistrellus nathusii | Ruige dwergvleermuis | FV | XX | FV | U1 | U1 | = |
| 1320 | Myotis brandtii | Brandt's vleermuis | XX | U2 | XX | XX | U2 | x |
| 1321 | Myotis emarginatus | Ingekorven vleermuis | XX | FV | U2 | U2 | U2 | x |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1322 | Myotis nattereri | Franjestaart | FV | FV | FV | FV | FV | + |
| 1326 | Plecotus auritus | Gewone grootoorvleermuis | FV | FV | U1 | U1 | U1 | + |
| 1330 | Myotis mystacinus | Baardvleermuis | FV | U1 | XX | U1 | U1 | x |
| 1337 | Castor fiber | Bever | FV | FV | FV | FV | FV | + |
| 1341 | Muscardinus avellanarius | Hazelmuis | FV | U2 | XX | U1 | U2 | + |
| 1387 | Orthotrichum rogeri | Tonghaarmuts | U2 | U2 | U1 | U1 | U2 | x |
| 6199 | Euplagia quadripunctaria | Spaanse vlag | FV | U1 | U1 | U1 | U1 | - |

*Figure E-16. Species - Woodlands and forests*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A072 | Pernis apivorus | Wespendief | B | x | x |
| A236 | Dryocopus martius | Zwarte Specht | B | - | = |

*Figure E-17. Bird species - Woodlands and forests*
*Source: article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019**

Of the seven habitat types, four have a very unfavourable conservation status and three a moderately unfavourable status. Hardwood forests (91F0) score worst: distribution area is moderately unfavourable and the other parameters are all very unfavourable. For the Luzulo-Fagetum beach forests (9110), both distribution area and surface area have been assessed as favourable. This habitat type is located in a corner of South Limburg at the extreme limit of its distribution area and physical geographical conditions make further expansion impossible. For the other 5 forests, the current distribution area is sufficient; in terms of surface area, the continuous surface area per forest is of particular concern. For 9160, 9190, 91D0, the very unfavourable structure and function (and their future prospects) is the reason for the very unfavourable state of conservation.
All forest types are sensitive to nitrogen deposition, only the old oak forests (9190) are very sensitive.

Of the 18 Habitat Directive species, 4 are favourable: two common species of bats, the newcomer Proserpinus proserpina and the Castor fiber. The Castor fiber was reintroduced in 1988 and has been on the rise ever since. The species is doing so well in some places that species management plans are being drawn up. On the other hand, there are also bats that score very unfavourably. Much is unknown about the bats, even though because of better observation methods and research has improved. A lot is also unknown about the Lucanus cervus, but it is certain that the population is small and the metapopulations are far apart. In the Netherlands, the Muscardinus avellanarius is only found in South Limburg, the species is increasing there thanks to management measures, but the situation is still very unfavourable at the moment. Orthotrichum rogeri, a pioneer species known from a limited number of riparian forests in the Netherlands, was not found in the familiar places, hence the very unfavourable state of conservation. For the remaining species it is mainly the case that the habitat is not (yet) in order.

Reliable data is not available for the Pernis apivorus, because the species is difficult to include in regular monitoring. The Dryocopus martius settled in the Netherlands at the beginning of the 20th century and has since expanded considerably. The national stand was probably at a peak around 1985. Since then, the species has declined somewhat, perhaps by switching to a different forestry system.

**Main pressure factors**

The main pressure factors reported for forest habitat types are the removal of dead and diseased trees, replaced with non-indigenous species and invasive exotic species such as the Prunus serotina, and Impatiens glandulifera in alluvial forests. Half of the forest habitat types are negatively affected by nitrogen deposition, mainly from agriculture, and groundwater abstraction.

The reported pressure factors for the Habitats Directive species are not related to their habitat in the forest. Forest management that is carried out incorrectly (removal of old or dead trees, or thinning) or changes (transformation) is a pressure factor especially for Muscardinus avellanarius, Lucanus cervus and birds.

**Measures needed to maintain or restore favourable conservation status**

The conservation of forest habitat types and species requires regular forest management to avoid succession. In order to limit the negative impact of nitrogen deposition and excessive nutrient levels in groundwater from agricultural areas or from heavily nutrient-loaded rivers and brook waters, and to improve the conservation status of forests, restoration measures are necessary. In particular to reduce eutrophication, weeding-out and desiccation, but also to allow expansion of habitat types or habitats. In order to implement these measures effectively, in most cases plots of land in and around the Natura 2000 site or in the NNN must be purchased. It is expected that the costs of this will increase considerably because from 2021 onwards, because full compensation and expropriation will have to be used more.

Tackling excessive nutrient levels in groundwater requires a range of measures that can be summarised under the heading of a transition to circular agriculture or nature-inclusive agriculture.

**Prioritization of measures to be implemented during the next MFF period**

Addressing nitrogen problems
Updating designation decisions
Updating management plans

Table E-19 includes all the costs that are expected to be needed for the above measures in the period 2021-2027, based on the current management plans for Natura 2000 areas and the agreements on the realisation of the NNN in the Nature Pact.

**List of prioritized measures to be carried out, and estimated costs for these measures**

See

Table E-19. The N2000-specific conservation and restoration measures (including intensified PAS measures and hydrological measures) are laid down in N2000 management plans and/or in PAS area analyses; the other acquisition, design and management measures are laid down in the provincial SNL-Nature Management Plans for each province.

*Table E-19[71]. Estimated cost of prioritized measures within Natura 2000 sites - Forest land and forests*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) N2000 specific conservation and recovery measures (including intensified nitrogen measures and hydrological measures) | One-off | - | 16.118.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land | One-off | 2,2 | 16.255.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature | One-off | 2,4 | 4.468.000 | Life |
| 4) Regular N2000 management costs based on standard costs | Annually | 194,6 | 2.827.000 | |

[71] See Annex 8: Sheet 'Prov+RWS', H150:H154

| | | | | |
|---|---|---|---|---|
| **Total (annually)** | | | 8.090.000 | |

*Table E-20[72]. Estimated cost of prioritized measures outside Natura 2000 sites - Forestland and forests*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) Specific measures in favour of Natura 2000, outside boundaries | One-off | - | 3.258.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land - within 1 km of Natura 2000 sites | One-off | 2,6 | 18.971.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature - within 1 km of Natura 2000 sites | One-off | 2,2 | 4.592.000 | Life |
| 4) Regular management costs based on standard costs - within 1 km of Natura 2000 sites | Annually | 55,6 | 1.758.000 | |
| 5) Acquisition costs for new nature based on purchase value of agricultural land - not related to Natura 2000 | One-off | 5,6 | 30.989.000 | |
| 6) Establishment costs for new nature based on standard costs per type of nature - not related to Natura 2000 | One-off | 5,9 | 15.521.000 | |
| 7) Regular management costs based on standard costs - not related to Natura 2000 | Annually | 272,6 | 5.523.000 | |
| **Total (annually)** | | | **17.752.571** | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

Improve the conservation status of forest species and habitat types and improve the status of forest birds. A small part of the desired results have been laid down in N2000 management plans and the rest in the provincial SNL nature management plans.

**Freshwater tidal zone[73]**

- Improvement of the quality of freshwater tidal zone for moist alluvial forests (softwood forests) *H91E0_A, rugged areas and fringes (Epilobium hirsutum) H6430_B, muddy river banks H3270, Alosa fallax H1103 (including spawning area), Microtus oeconomus arenicola *H1340, Orthotrichum rogeri H1387 and Castor fiber H1337.

**Low lying floodplains (including former floodplains)[74]**

- Moist alluvial forests (softwood forests and ash forests) *H91E0_A and *H91E0_B expand also for Castor fiber H1337.

**High lying floodplains (including former floodplains)[75]**

- Development of Riparian mixed forests H91F0: increased surface area and quality improvement.

**Fens - Marshes[76]**

- Conserve bog woodland H91D0.

**Forests in brook valleys[77]**

- Restore quality and increase acreage of humid alluvial forests (ash-elm forests) *H91E0_B and (brook accompanying forests) *H91E0_C and preserve habitat of Vertigo moulinsiana H1016.
- Increase in acreage, preservation of vegetation structure and restoration of quality and increase in oak-hornbeam forests (higher sandy soils) H9160_A.

**Wet - Oak-hornbeam forest[78]**

- Improve quality and expand acreage of oak-hornbeam forests (higher sandy soils) H9160_A.

[72] See Annex 8: Sheet 'Prov+RWS', H157:H164
[73] See Natura 2000 targets document, p.89
[74] See Natura 2000 targets document, p.89
[75] See Natura 2000 targets document, p.90
[76] See Natura 2000 targets document, p.98
[77] See Natura 2000 targets document, p.107
[78] See Natura 2000 targets document, p.115

**Dry - Dry forests**[79]

- Maintain an area of old oak forests (H9190, mainly *strubben* forests) and improve quality, also as a habitat for Lucanus cervus H1083.
- Extend to substantial areas beech-oak forests with holly H9120 and improve quality (including tree species composition and age structure of trees).
- Preserve quality *Myotis emarginatus* H1321.

**Plateau - Plateau Forests**[80]

- Restore varied vegetation structure of Luzulo-Fagetum beech forests H9110 and beech-oak forests with holly H9120 (alternating open and closed), soften forest edge and restore natural tree composition.

**Expected results: other benefits**

The environmental benefits of the described measures will be:

a) Restoration of the quality of soils and groundwater tables due to reduction of the nitrogen deposition in woodlands.
b) Increase of groundwater tables and increase of groundwater storage.
c) Increase of the populations of pollinators.

## E.2.7. Rocky habitats, dunes & sparsely vegetated lands

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

*Because of the implementation of the PAF on the basis of the management plans of the sites, the allocation of habitat types and species has been adjusted in relation to the proposed classification on the basis of the MAES categories: under this heading, therefore, all areas of the coastal dunes are discussed, and therefore all associated habitat types (21XX) and species.*

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H2110 | Embryonic shifting dunes | FV | FV | FV | FV | FV | + |
| H2120 | White dunes | FV | FV | FV | FV | FV | + |
| H2130 | Grey dunes | FV | U1 | U1 | U1 | U1 | X |
| H2140 | Dune heathlands with crowberry | FV | FV | FV | FV | FV | = |
| H2150 | Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) | FV | FV | U1 | U1 | U1 | = |
| H2160 | Dunes with *Hippophae rhamnoides* | FV | FV | FV | FV | FV | + |
| H2170 | Dunes with Salix repens ssp. argentea (*Salicion arenariae*) | FV | FV | FV | FV | FV | = |
| H2180 | Wooded dunes | FV | FV | U1 | U1 | U1 | = |
| H2190 | Humid dune slacks | FV | U1 | U1 | U1 | U1 | = |

*Figure E-18. Habitats - Dunes*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

[79] See Natura 2000 targets document, p.116
[80] See Natura 2000 targets document, p.133

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 6284 | Epidalea calamita | Rugstreeppad | FV | U1 | U1 | U1 | U1 | - |
| 1314 | Myotis daubentonii | Watervleermuis | FV | FV | XX | FV | FV | = |
| 1014 | Vertigo angustior | Nauwe korfslak | U1 | U2 | U1 | U2 | U2 | - |
| 1261 | Lacerta agilis | Zandhagedis | FV | FV | U1 | U1 | U1 | + |
| 1903 | Liparis loeselii | Groenknolorchis | FV | FV | FV | FV | FV | = |

*Figure E-19. Species - Dunes*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A082 | Circus cyaneus | Blauwe Kiekendief | B | - | - |
| A222 | Asio flammeus | Velduil | B | ? | - |
| A277 | Oenanthe oenanthe | Tapuit | B | = | - |

*Figure E-20. Bird species - Dunes*
*Source: article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

HR and VR reports 2019:
Five of the nine dune types are assessed as favourable (2110, 2120, 2140, 2160 and 2170). The structure and function of Atlantic decalcified fixed dunes (2150) is assessed moderately unfavourably, the future perspective of the wooded dunes (2180) is also assessed moderately unfavourably, as a result of which both are assessed moderately unfavourably. For the grey dunes (2130) and humid dune slacks (2190) the surface is also moderately unfavourable.

The Liparis loeselii, a large part of whose distribution lies in the dunes, is in a favourable state of conservation. The Myotis daubentonii has a centre of gravity in its distribution in the older wooded dunes. This species is also doing well. Of the Lacerta agilis, also a species of heath, the habitat is not in order, but progress can be seen. On the other hand, the Vertigo angustior shows a clear downward trend, this seems to be caused by (large-scale) nature development in the dunes (removal of forest, trowel and top layer to restore dynamics).
All bird species typical of the dune area have declined since the entry into force of the Birds Directive. The spout has recently shown a recovery from this downward trend.

**Main pressure factors**
Almost all dune habitat types deteriorate, disappear or change to another habitat type without management (so natural processes are an important pressure factor). Furthermore, for about half of the dune habitat types nitrogen deposition, in particular from agriculture, groundwater abstraction and invasive exotic species, is an important pressure factor. Specifically for 2110 and 2120, recreation and erosion are important pressure factors. Nitrogen deposition and (related) succession are also important pressure factors for (bird) species. On the other hand, (too) intensive grazing is also a problem.

**Measures needed to maintain or restore favourable conservation status**

Improving the conservation status of dunes requires recovery measures, in particular to reduce eutrophication, roughing and desiccation, but also to allow the expansion of habitat types or habitats. In order to implement these measures effectively, plots of land in and around the Natura 2000 site or in the NNN must in most cases be purchased. It is expected that the costs of this will increase considerably because from 2021 onwards full compensation and expropriation will have to be used much more.

**Prioritization of measures to be implemented during the next MFF period**

The Table E-21 includes all expected costs for the measures above in the period 2021-2027, based on the current management plans for Natura 2000 areas and the agreements on the realisation of the NNN in the Nature Pact.

**List of prioritized measures to be carried out, and estimated costs for these measures**

Addressing nitrogen problems
Updating designation decisions
Updating management plans

See Table E-21. The N2000-specific conservation and restoration measures (including intensified PAS measures and hydrological measures) are laid down in N2000 management plans and/or in PAS area analyses; the other acquisition, design and management measures are laid down in SNL's nature management plans for each province.

*Table E-21[81]. Estimated cost of prioritized measures within Natura 2000 sites - Dunes*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) N2000 specific conservation and remediation measures (including intensified nitrogen measures and hydrological measures) | One-off | - | 15.572.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land | One-off | 1,7 | 12.036.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature | One-off | 1,8 | 1.972.000 | LIFE |
| 4) Regular N2000 management costs based on standard costs | Annually | 69,8 | 1.754.000 | |
| **Total (annually)** | | | 5.979.714 | |

*Table E-22[82]. Estimated cost prioritized measures outside Natura 2000 sites - Dunes*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| 1) Specific measures in favour of Natura 2000, outside boundaries | One-off | - | 3.805.000 | LIFE |
| 2) Acquisition costs for new nature based on purchase value of agricultural land - within 1 km of Natura 2000 sites | One-off | 1,9 | 13.806.000 | |
| 3) Establishment costs for new nature based on standard costs per type of nature - within 1 km of Natura 2000 sites | One-off | 1,4 | 1.427.000 | LIFE |
| 4) Regular management costs based on standard costs - within 1 km of Natura 2000 sites | Annually | 4,3 | 342.000 | POP |
| 5) Acquisition costs for new nature based on purchase value of agricultural land - not related to Natura 2000 | One-off | 3,6 | 21.980.000 | POP |
| 6) Establishment costs for new nature based on standard costs per type of nature - not related to Natura 2000 | One-off | 3,9 | 3.424.000 | |
| 7) Regular management costs based on standard costs - not related to Natura 2000 | Annually | 6,9 | 532.000 | |
| **Total (annually)** | | | **7.222.857** | |

[81] See Annex 8: Sheet 'Prov+RWS', H169:H173
[82] See Annex 8: Sheet 'Prov+RWS', H176:H183

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

Improve the conservation status of dune species and habitat types and improve the status of dune birds.

The desired results are partly laid down in N2000 management plans and the rest in the provincial SNL nature management plans.

**Foredune**[83]

- Space for natural spray: white dunes H21205 and embryonic shifting dunes H2110 e.g. important as habitat for lesser Larus fuscus A183, Sternula albifrons A195, Charadrius hiaticula A137 and Charadrius alexandrinus A138.

**Dry inner dunes (including dry forests)**[84]

- Extension and recovering the quality of grey dunes *H2130, also as a habitat of Oenanthe oenanthe A277, Asio flammeus A222 and Circus cyaneus A082, by preventing aging and destruction.
- Retain surface area and quality of dune heathlands with crowberry *H2140 and Atlantic decalcified fixed dunes *H2150.
- Expansion of surface area (also in foredunes) and quality improvement (structural variation and variety of species) of wooded dunes (dry) H2180_A.

**Dune slacks (secondary) and beach plains (including humid forests)**[85]

- Preserve surface area and restore quality of humid dune slacks (calcareous) H2190_B. Preserve humid dune slacks H2190 as habitat of Botaurus stellaris A021, Platalea leucorodia A034, Circus cyaneus A082, Asio flammeus A222, Microtus oeconomus arenicola *H13 40, Vertigo angustior H1014 and Liparis loeselii H1903 (enlargement of surface area is done almost everywhere). On *Terschelling* and *Schiermonnikoog* more space for wooded dunes (moist) H2180_B.

**Inner dune edge (transition to polders, including wet forests)**[86]

- Development of poor heathery grasslands *H6230, grey dunes (heathery) *H2130_C and Molinia meadows H6410 in promising locations.
- Restore brooks and rivers with water plants (Ranunculus aquatilis) H3260_A.
- Restore hydrological/moisture gradient wooded dunes (inner dune edge) H2180_C, poor heathery grasslands *H6230 and Molinia meadows H6410 (*Schouwen, Texel, Terschelling, Schiermonnikoog*, along the mainland coast and *Goerree* and *Voorne*). On *Texel* partly for the benefit of Microtus oeconomus arenicola *H1340.

**Expected results: other benefits**

The environmental benefits of the described measures will be:

a) Restoration of the quality of soils due to reduction of the nitrogen deposition in woodlands;
b) Increase of the populations of pollinators.

## E.2.8. Freshwater habitats (rivers and lakes)

**Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats**

[83] See Natura 2000 targets document, p.79
[84] See Natura 2000 targets document, p.79-80
[85] See Natura 2000 targets document, p.80
[86] See Natura 2000 targets document, p.80

| Habitat code | Habitat type | RANGE 2019 | SURFACE AREA 2019 | S&F 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|
| H3110 | Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) | U2 | U2 | U2 | U2 | U2 | - |
| H3130 | Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea | FV | U1 | U2 | U2 | U2 | + |
| H3140 | Hard oligo-mesotrophic waters with benthic vegetation of Chara spp. | FV | FV | U1 | U1 | U1 | = |
| H3150 | Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation | FV | U1 | U1 | U2 | U2 | - |
| H3160 | Natural dystrophic lakes and ponds | FV | U1 | U1 | U1 | U1 | + |
| H3260 | Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation | U2 | U2 | U1 | U2 | U2 | - |
| H3270 | Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation | FV | FV | FV | FV | FV | + |

*Figure E-21. Habitats - Freshwater habitats (rivers and lakes)*
*Source: Article 17 report Habitats Directive 2019:*
*https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_habitats_reports-20190819-.xml/manage_document*

| Kind of code | Scientific name | Dutch name | RANGE 2019 | POPULATION 2019 | HABITAT 2019 | FUTURE 2019 | TOTAL 2019 | TREND CS 2019 |
|---|---|---|---|---|---|---|---|---|
| 1037 | Ophiogomphus cecilia | Gaffellibel | FV | U1 | U1 | U1 | U1 | = |
| 1038 | Leucorrhinia albifrons | Oostelijke witsnuitlibel | U2 | U2 | U2 | U2 | U2 | - |
| 1040 | Stylurus flavipes | Rivierrombout | FV | XX | FV | FV | FV | = |
| 1042 | Leucorrhinia pectoralis | Gevlekte witsnuitlibel | FV | U1 | FV | FV | U1 | = |
| 1048 | Aeshna viridis | Groene glazenmaker | FV | U1 | U1 | U1 | U1 | - |
| 1081 | Dytiscus latissimus | Brede geelgerande waterroofkever | U2 | U2 | U1 | U2 | U2 | - |
| 1082 | Graphoderus bilineatus | Gestreepte waterroofkever | FV | FV | FV | FV | FV | + |
| 1095 | Petromyzon marinus | Zeeprik | FV | U2 | FV | U1 | U2 | - |
| 1096 | Lampetra planeri | Beekprik | U2 | U2 | U2 | U2 | U2 | = |
| 1099 | Lampetra fluviatilis | Rivierprik | U1 | U1 | FV | FV | U1 | - |
| 1103 | Alosa fallax | Fint | FV | U2 | U2 | U2 | U2 | = |
| 1106 | Salmo salar | Zalm | FV | U2 | XX | U1 | U2 | - |
| 1145 | Misgurnus fossilis | Grote modderkruiper | U2 | U2 | U2 | U2 | U2 | - |
| 1166 | Triturus cristatus | Kamsalamander | FV | FV | U1 | U1 | U1 | = |
| 1309 | Pipistrellus pipistrellus | Gewone dwergvleermuis | FV | XX | XX | XX | XX | x |
| 1312 | Nyctalus noctula | Rosse vleermuis | FV | U2 | XX | XX | U2 | x |
| 1314 | Myotis daubentonii | Watervleermuis | FV | FV | XX | FV | FV | = |
| 1317 | Pipistrellus nathusii | Ruige dwergvleermuis | FV | XX | FV | U1 | U1 | = |
| 1318 | Myotis dasycneme | Meervleermuis | XX | U1 | U1 | U1 | U1 | - |
| 1322 | Myotis nattereri | Franjestaart | FV | FV | FV | FV | FV | + |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1327 | Eptesicus serotinus | Laatvlieger | XX | U1 | XX | U1 | U1 | x |
| 1337 | Castor fiber | Bever | FV | FV | FV | FV | FV | + |
| 1614 | Apium repens | Kruipend moerasscherm | FV | U2 | U2 | U2 | U2 | - |
| 1831 | Luronium natans | Drijvende waterweegbree | U2 | U2 | U2 | U2 | U2 | x |
| 5339 | Rhodeus amarus | Bittervoorn | FV | FV | FV | FV | FV | + |
| 6284 | Epidalea calamita | Rugstreeppad | FV | U1 | U1 | U1 | U1 | - |
| 6963 | Cobitis taenia | Kleine modderkruiper | FV | FV | FV | FV | FV | + |
| 6965 | Cottus gobio | Rivierdonderpad | U2 | U2 | U1 | U1 | U2 | - |

*Figure E-22. Species - Freshwater habitats (rivers and lakes)*
*Source: Article 17 report Habitats Directive 2019: https://cdr.eionet.europa.eu/nl/eu/art17/envxuhrwa/NL_species_reports-20190819.xml/manage_document*

| Kind of code | Scientific name | Dutch name | Season | Population trend short term | Population trend long term |
|---|---|---|---|---|---|
| A004 | Tachybaptus ruficollis | Dodaars | W | = | = |
| A005 | Podiceps cristatus | Fuut | W | = | + |
| A037 | Cygnus columbianus bewickii | Kleine Zwaan | W | - | + |
| A038 | Cygnus cygnus | Wilde Zwaan | W | ? | + |
| A053 | Anas platyrhynchos | Wilde Eend | W | - | - |
| A058 | Netta rufina | Krooneend | W | ? | + |
| A059 | Aythya ferina | Tafeleend | W | - | - |
| A061 | Aythya fuligula | Kuifeend | W | = | = |
| A062 | Aythya marila | Topper | W | + | = |
| A067 | Bucephala clangula | Brilduiker | W | - | - |
| A070 | Mergus merganser | Grote Zaagbek | W | ? | - |
| A125 | Fulica atra | Meerkoet | W | + | - |
| A193 | Sterna hirundo | Visdief | B | - | + |
| A197 | Chlidonias niger | Zwarte Stern | P | - | - |
| A229 | Alcedo atthis | IJsvogel | B | + | + |
| A249 | Riparia riparia | Oeverzwaluw | B | - | + |
| A391 | Phalacrocorax carbo sinensis | Aalscholver | W | = | + |
| A767 | Mergellus albellus | Nonnetje | W | = | = |
| A855 | Mareca penelope | Smient | W | = | + |
| A862 | Hydrocoloeus minutus | Dwergmeeuw | P | ? | - |
| A889 | Mareca strepera | Krakeend | W | + | + |
| A894 | Hydroprogne caspia | Reuzenstern | P | + | + |

*Figure E-23. Bird species - Freshwater habitats (rivers and lakes)*
*Source: article 12 report Birds Directive:*
https://cdr.eionet.europa.eu/nl/eu/art12/envxbhkhw/NL_birds_reports_20191030-110231.xml/manage_document

**Habitats Directive and Birds Directive reports 2019:**
Of the 7 freshwater habitat types, only the river with muddy banks (3270) are in a favourable conservation status. The hard oligo-mesotrophic waters (3140) (which in the Netherlands vary from small mires to the peripheral lakes around the Flevopolder) have a favourable distribution area and surface area, but themoderately unfavourable structure and function results in a moderately unfavourable overall assessment. Both habitat types

have a positive trend. The other habitat types are very unfavourable. Very weakly *Littorelletalia uniflorae* (3110) and water courses with water plants (3260) are in the worst position because they score very unfavourably on all fronts. The future perspective of 3260 is a bit brighter. The Oligotrophic to mesotrophic standing waters (3130) and dystrophic lakes and ponds (3160) only have a very unfavourable structure and function. Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation (in low moors and along rivers) (3150) have a moderately unfavourable structure and function, but it is expected that the increase in invasive alien crayfish in the low moors in particular will significantly further affect the quality.
All waters (3110, 3130 and 3160) are highly sensitive to nitrogen deposition, the habitat types of flowing waters (3260 and 3270) are not sensitive. For hard oligo-mesotrophic waters (3140) and natural eutrophic lake with vegetations (3150) the nitrogen sensitivity of the occurrence depends: in the enclosed estuaries they are not sensitive, outside they are sensitive to very sensitive (3140 on the high sandy soils).

**Species**

Of the 29 species, about one third have a very poor conservation status. A third is moderately unfavourable and a little less than a third is favourable: common species of bats and fish, Graphoderus bilineatus, the Stylurus flavipes and the Castor fiber. The Castor fiber was reintroduced in 1988 and has been on the rise ever since. The specie is doing so well in some places that species management plans are being drawn up. The *Stylurus flavipes* returned on its own at the end of the 1990s, probably due to improved water quality in the rivers. The Graphoderus bilineatus also benefits from improved water quality. Some of the species that are in poor condition are (still) very rare in the Netherlands (Leucorrhinia albifrons, Dytiscus latissimus, Alosa fallax, Salmo salar). Species such as Misgurnus fossilis and Lampetra planeri have declined in the past because their natural habitat of flood plains or meandering brooks largely disappeared. The *Cottus gobio* also suffers from exotic *Gobiidae*. Both plant species have small, isolated populations, of which those outside nature reserves are declining due to deterioration in the quality of the habitat.

**Birds**

Most birds linked to rivers and lakes winterin the Netherlands. Only the Alcedo atthis and Riparia riparia depend on the Dutch rivers and lakes as breeding birds. Half of the 22 species show a positive long-term trend. For most species this trend has not been so positive in recent years, only the Alcedo atthis, Mareca strepera and Hydroprogne caspia are still increasing. Anas platyrhynchos, Netta rufina, Bucephala clangula (wintering) and Chlidonias niger (flushing) have been declining for a long time. These species are still numerous in the *IJsselmeer*, for example.

**Main pressure factors**

The main pressure factors reported for freshwater habitat types are water pollution (water quality) and groundwater extraction (water quantity and impact of seepage). Furthermore, invasive exotic species (American crayfish, exotic fish species, water crassula, etc.) are a major pressure factor. Naturally, nitrogen deposition is an important pressure factor for standing waters. For flowing waters, the change of water flows (diversion of watercourses, bank surfacing) is an important pressure factor.
Changes in water management and water quality are the most important pressure factors for (bird) species. Plant protection products also play a role for the species. For many ducks and the Cygnus columbianus bewickii it is indicated that climate change has an effect on the dispersal area: due to softer winters, fewer individuals hibernate here.

**Measures needed to maintain or restore favourable conservation status**

In large freshwaters, measures are being implemented during the current management plan period:
- Adjusting water level management;
- Establishment and management of breeding sites for birds breeding on the bare ground;

- Making areas such as roughed reed land and flooded situations
- Regulating activities that take place in order to create sufficient rest for birds.

Some of these measures are also required in the period 2021 - 2027, in addition to the implementation of a number of system measures (PAEGW).

In addition, a number of system measures are being implemented (PAEGW):
- Construction of wet connections between the *Markermeer* and the *Lepelaarsplassen* and the *Oostvaardersplassen*.
- Construction of shallows, reed lands, banks and fish passages in *Wieringerhoek*
- Coast of the *Friese IJsselmeer*: strengthening of lee and shallows to reduce erosion, construction of new sandbanks and islands, making existing fish passages more effective and construction of new ones to improve the connection with the hinterland;
- Adapt North Holland's *Markermeer* coast to improve nature and water quality.

WFD measures Ijsselmeer region
- Local redevelopment of the southern *Randmeren* to improve the view
- Shipping passageway: design of the lee part
- Improve reed quality (continuation LIFE+)
- Ecological improvement/design *Ketelmeer*

WFD measures Border mesh
- Temporarily 7_1 *Oude Maasje - Roosteren*
- *Molensteense Plas*
- *Laakerveld/Walburg*
- *De Brandt*

In the smaller fresh waters (mires and streams) regular management is needed to prevent succession. In order to limit the negative impact of nitrogen deposition and to improve the conservation status of small freshwaters, recovery measures are required. In particular to reduce eutrophication, acidification and attenuation, but also to allow the expansion of habitat types or habitats. In order to implement these measures effectively, in most cases plots of land in and around the Natura 2000 site or in the NNN must be purchased (e.g. to enable hydrological measures). It is expected that the costs of this will increase considerably because from 2021 onwards full compensation and expropriation will have to be used much more.

**Prioritization of measures to be implemented during the next MFF period**

Ensuring rest and sufficient food for birds, improving the quality and size of reed marshes and bare soils for breeding birds, improving the quality and size of habitat types and freshwater tidal nature.

All the above measures will be carried out in the period 2021 - 2027

**Fout! Verwijzingsbron niet gevonden.** includes all expected costs for the measures above in the period 2021-2027, based on the current management plans for Natura 2000 areas and the agreements on the realisation of the NNN in the Nature Pact.

Throughout agricultural nature management in the Netherlands the focus and priority has been given to the protection and conservation of species of the Birds and Habitats Directive.

**List of prioritized measures to be carried out, and estimated costs for these measures**

A further elaboration of the above measures can be found in the PAEGW and the WFD documents, the other measures are partly included in the current management plans and will be included in the amended management plans that have yet to be drawn up.

Addressing nitrogen problems
Updating designation decisions
Updating management plans

Specific management packages for agricultural nature management around or along mires, lakes, brooks and rivers designated as N2000 areas will improve water quality in those waters and increase opportunities for foraging water birds and other water-bound species of the Birds and Habitats Directive.

*Table E-23[87]. Estimated cost of prioritized measures within Natura 2000 sites - Freshwater habitats (rivers and lakes)*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| Measures to regulate activities and mitigation (RWS) | Recurring | - | 786.000 | |
| System measures (PAEGW) (RWS) | One-off | - | 22.845.000 | |
| WFD measures (RWS) | One-off | - | 2.504.000 | |
| Management and maintenance (RWS) | Recurring | | 5.570.000 | |
| Fte Rijkswaterstaat | Recurring | | 654.000 | |
| N2000 specific conservation and restoration measures by provinces (additional to RWS) | One-off | - | 4.424.000 | Life |
| **Total (annually)** | | | 10.272.714 | |

*Table E-24. Estimated cost prioritized measures outside Natura 2000 sites - Freshwater habitats (rivers and lakes)*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| N2000 specific conservation and recovery measures by provinces, outside boundaries[88] | One-off | - | 37.000 | LIFE |
| Agricultural nature management[89] . | Annually | 32,31 | 4.844.112 | EAFRD |
| **total (annually)** | | | 4.849.398 | |

**Expected results for targeted species and habitat types**

Improve the conservation status of freshwater species and habitat types and improve the status of freshwater birds. Most of the objectives will be achieved after the measures have been taken; for a number of species and habitat types more time is needed. Which species are involved is not exactly clear at this moment

Some of the desired results are laid down in N2000 management plans and, as far as agricultural nature management is concerned, in the provincial SNL nature management plans (and in the RWS management plans for large waters).

**River, side channels and deep ponds[90]**

- No barriers in the migration route of Salmo salar H1106, Petromyzon marinus H1095, Lampetra fluviatilis H1099 and Alosa alosa H1102.
- Preserve streams and rivers with aquatic plants (large pondweeds) H3260_B.
- Foraging area and fallback in case of frost for species such as Aythya fuligula A061.
- Preservation and expansion of rivers with muddy banks H3270 and gravel banks with pioneer vegetation.

[87] See Annex 8: Sheet 'Prov+RWS', I190:J195.
[88] See Annex 8: Sheet ' Prov+RWS ', J200
[89] See Annex 6 for the calculation of the target value and of the estimated costs
[90] See Natura 2000 targets document, p.88

**Freshwater tidal zone**[91]

- Improvement of the quality of freshwater tidal zone for moist alluvial forests (softwood forests) *H91E0_A, rugged areas and fringes (Epilobium hirsutum) H6430_B, rivers with muddy banks H3270, Alosa fallax H1103 (including spawning area), Microtus oeconomus arenicola *H1340, Orthotrichum rogeri H1387 and Castor fiber H1337.

**Low-lying floodplains (including former floodplains)**

- Conservation and extension of natural eutrophic lakes with vegetation H3150, in the form of beaches, in particular restoration of Magnopotamion vegetation, also as a breeding biotope of Chlidonias niger A197.
- Moist alluvial forests (softwood forests and ash-red forests) *H91E0_A and *H91E0_B extend also for Castor fiber H1337.
- Quality improvement and expansion of reed swamp with its associated breeding birds (Botaurus stellaris A021, Acrocephalus arundinaceus A298), supplemented with Microtus oeconomus arenicola *H1340.
- Maintain sufficient roosting and foraging area for geese, Cygnus columbianus bewickii A037, Cygnus cygnus A038 and Mareca penelope A050.
- Low-dynamic waters for Misgurnus fossilis H1145, Rhodeus amarus H1134 and amphibians, such as Triturus cristatus H1166.
- Preservation and expansion of flooded situations and shallow water for ducks, Crex crex A122, Porzana porzana A119 and waders.

**Mires**[92]

- Restoration and durable preservation of large oligotrophic waters containing very few minerals H3110 in large open heathlands.
- Quality improvement (also later stages of succession) of oligotrophic to mesotrophic standing waters with vegetation H3130 partly as habitat for Leucorrhinia pectoralis H1042 and Podiceps nigricollis A008
- Quality improvement of natural dystrophic lakes and ponds H3160.

**Bays and bordering lakes**[93]

- Aiming for a more balanced system with good water quality for aquatic plants, fish and shellfish (especially in H3140 and H3150), including birds such as the Cygnus columbianus bewickii A037, Netta rufina A059, Aythya fuligula A061 and Mergellus albellus A068.
- Plenty of open water with moulting areas and resting areas for water birds such as Podiceps cristatus A005, geese, Spatula clypeata A056 and Aythya fuligula A061.
- Swamp formation at the edges of lakes for land-water interaction, spawning fish, Microtus oeconomus arenicola *H1340 and for marsh birds as Botaurus stellaris A021 and Acrocephalus arundinaceus A298.
- Flooded situations for Mareca penelope A050 and breeding birds, such as Calidris pugnax A151.

**Fens - Puddles**[94]

- A more balanced system (water quality, water quantity and hydromorphology): aquatic plant community (for H3140 and H3150), Chlidonias niger A197, Anisus vorticulus H101X and fish such as o.a. Rhodeus amarus H1134, Misgurnus fossilis H1145, Cobitis taenia Complex H1149 and insects such as Leucorrhinia pectoralis H1042 and Graphoderus bilineatus H1082.

**Wet - Mires and small bogs**[95]

- Restore and sustainably preserve large oligotrophic waters H3110 in large open heathlands.
- Quality improvement (also later stages of succession) of oligotrophic to mesotrophic standing waters H3130 partly as habitat for Leucorrhinia pectoralis H1042 and Podiceps nigricollis A008
- Quality improvement of natural dystrophic lakes and ponds H3160.

[91] See Natura 2000 targets document, p.89
[92] See Natura 2000 targets document, p.114
[93] See Natura 2000 targets document, p.97
[94] See Natura 2000 targets document, p.98
[95] See Natura 2000 targets document, p.114

**Brook valleys – Brook courses**[96]

- Restore water quality and morphodynamics for fish (Cottus gobio H1163 and Lampetra planeri H1096) and water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation H3260_A; this concerns sufficient variation in composition and structure of bedding with leeward places.

**Expected results: other benefits**

The environmental benefits of the described measures will be:

a) Restoration of water quality and of connectivity between water bodies;
b) Increase of groundwater tables and increase of groundwater storage;
c) Increase of the populations of pollinators due to more nature-oriented management of embankments of rivers and brooks.

## E.2.9. Others (caves, etc.)

### Current status of habitats and species, conservation measures taken until now and their impact so far, remaining pressures and threats

**Current state of affairs**

In the Dutch underground limestone quarries - total surface area within the N2000 limit: 500 ha - three species are involved: Myotis myotis, Myotis daubentoniid and Myotis emarginatus. 85% of these underground quarries are used as wintering sites for the bat species mentioned above.

The underground limestone quarries are of great importance for wintering and for stray activities at quarry entrances leading to mating. The conservation status of the Myotis myotis and Myotis daubentoniid is unfavourable. The one of the Myotis emarginatus is favorable.

Most underground limestone quarries are owned by one of the site management organisations. Some objects - some of which are important - are owned by municipalities and private individuals.

Virtually all underground quarries in N2000 areas were closed to recreational and tourist access between 1980 and 2000; in principle, accessableonly for researchers and guided tours. The monitoring of bat numbers in the quarries has been carried out for decades by volunteers from a number of private nature study organisations and has produced one of the longest and best documented time series of bat populations in the Netherlands.

**Pressure factors**

The most important remaining pressure factors for the three HD bat species in underground limestone quarries are:

- Loss of surface area and fragmentation of habitat due to over-exploitation of some parts of the quarries
- Disturbance due to light, noise and vibrations as a result of commercial exploitation (by the hotel and catering industry and in the context of events) and a locally excessive numbers of visitors
- Mechanical effects resulting from building and construction activities in some quarries

### Measures needed to maintain or restore favourable conservation status

Carrying out annual safety inspections - in accordance with the Mining Act - with a view to extensive use in around 40 marl quarries by visitors and researchers.

Carrying out stabilisation work and realising closures to safely seal off the remaining unsealed marl quarries to the public.

Drawing up quarry management plans (per marl quarry) and developing and opening up a subsidy scheme for management and maintenance work. Through the subsidy scheme, the costs incurred by the quarry owner for supervision, enforcement and supervision of surveys and inspections can be partially reimbursed. The costs of the subsidy scheme are included in the overview of measures. It is also necessary to update the current code of conduct for visitors and researchers.

[96] See Natura 2000 targets document, p.134

In addition, various studies are needed to fill knowledge gaps. In particular the following knowledge gaps: what are the climate zones in the limestone quarries, where do the migration routes to and from the quarries run, where are the places of residence of *Myotis dasycneme* (pond bats) males and where are the locations of resting and mating in summer and autumn and of stray zones. There is also a need for further research into alternatives to number monitoring and an analysis to determine the risk of infection with white nose syndrome (WNS) in *Myotis dasycneme* and to determine the adverse effects of contamination with toxins (particularly DDT from mushroom farms that have now been stopped).

### Prioritization of measures to be implemented during the next MFF period

Measures to be taken in order of priority:
1. Reduction and cessation of events and commercial exploitation leading to loss of habitat, disturbance and/or fragmentation of the 3 mentioned bat species during hibernation;
2. Activation of a subsidy scheme to support the management work of quarry owners for the benefit of bat populations;
3. Updating current code of conduct for visitors and researchers and implementation of safety inspections;
4. Carrying out the investigations referred to above

### List of prioritized measures to be carried out, and estimated costs for these measures

See the table below.

*Table E-25[97]. Estimated cost of prioritized measures within Natura 2000 sites to protect certain habitats and species*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-funding |
|---|---|---|---|---|
| Natura 2000 specific conservation and recovery measures. In particular: stabilisation work and closure of the remaining unsealed subterranean limestone quarries for unaccompanied / non-authorised visitors. | One-off | 5 | 525.000 | Life |
| Natura2000 management and maintenance measures (subsidy scheme) | Annually | 5 | 250.000 | Life |
| Inspections Natura 2000 quarries for safety for extensive use | Annually | 2 | 35.000 | Life? |
| Preparation of quarry management plans and development of a subsidy scheme for the Natura 2000 limestone quarries | One-off | 5 | 160.000 | Life? |
| Carry out various studies in the Natura 2000 limestone quarries and update the Code of Conduct. | One-off | 5 | 380.000 | Life? |
| Total (annually) | | | 437.143 | |

*Table E-26[98]. Estimated cost prioritized measures outside Natura 2000 sites (broader measures relating to green infrastructure)*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on | Possible source of |
|---|---|---|---|---|

[97] See Annex 8: Sheet 'Prov+RWS', H205
[98] See Annex 8: Sheet 'Prov+RWS', H209

| | | | an annual basis) | EU co-financing |
|---|---|---|---|---|
| Natura 2000 specific conservation and remediation measures, outside boundaries | One-off | PM (To be determined more accurately) | 50.000 | LIFE |
| | | | | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for targeted species and habitat types**

Improvement of the conservation status of bats wintering in underground limestone quarries. In particular: population growth (because wintering pregnant females are less disturbed) and growth of the number of wintering bats.

**Expected results: other benefits**

Other benefits that are expected are mainly socio-economic:
With better knowledge of the distribution and the status of the bats in the underground limestone quarries it will be possible to be more exact in giving licenses for recreational and touristic activities in the underground limestone quarry-networks. In the present situation data are lacking so that licenses cannot be given due to the precautionary principle in de BHD.
Furthermore, when safety inspections are established, stabilization measures have been taken and more is known about migratory routes through the quarries and outside the quarries monitoring of the bats can be improved ánd more quarries can be visited due to better knowledge about the bats and due to the extra safety-measures. For some towns and villages (especially Maastricht and Valkenburg) the economic value of the touristic and recreational activities in the underground quarries is very important.
Resolving existing problems with regard to economic activities in the quarries will improve the support of these towns and villages for improvement of the conservation status of the bat-populations in de underground quarry-networks.
Environmental benefits:
The management plans for the underground quarries include plans for removing litter and rubbish left in the quarries after mushroom farms ended their activities in the quarries.

## E.2.10. References for area related conservation and restoration measures, inside and outside Natura 2000

Report Royal Haskoning / DHV drawn up December 2018 on behalf of BIJ12 and Provinces, specifically for filling the PAF 2021-2027. This report contains important information and interpretations of the cost statements for the PAF for the period 2021-2027 as requested by BIJ12 and drawn up by RoyalHaskoningDHV. In addition to the information for section E of the PAF (E. Priority measures and financing needs for 2021-2027), this report provides an insight in the included costs and the sources available for the cost calculations.

The following categories of measures are distinguished in the PAF:

- Horizontal measures and administrative costs related to Natura 2000. This includes generic costs that cannot be directly linked to a specific habitat type.
- Conservation and restoration measures for specific species and habitat types related to Natura 2000 sites. This includes specific habitat type related costs.

- Additional “green infrastructure” measures outside of Natura 2000 areas. This includes costs related to further development and management within the Nature Network The Netherlands) (NNN, Dutch: Natuur Netwerk Nederland) during the intended period.
- Additional (species-specific) measures that are not related to specific ecosystems or habitat types. This includes costs that are related to the protection of species that are protected under EU Birds and Habitats Directives.

Based on the abovementioned categories of measures, the following key points have been classified for the costs directly related to Natura 2000 and NNN for the period of 2021-2027:

- One-off acquisition costs of new nature sites;
- One-off design costs of the designated areas;
- Annual management costs of the existing designated areas;
- One-off (area-related) PAS measures.

## E.3. Additional species-specific measures not related to specific ecosystems or habitats

### E.3.1. Species-specific measures and programmes not covered elsewhere

**Current state of the species**

| |
|---|
| The main species that are targeted for outside the Natura2000 areas are the species on Annex IV of the Habitats Directive (HD) and the species of the Birds Directive (BD) occurring in natural and agricultural areas outside the Nature2000 areas.<br>For the species on Annex IV of the HD the current state was evaluated in the article 17 report in 2019.<br>The summary of that evaluation is presented in the following table: |

| code | NL name | Range | Population | Habitat of the species | Future prospect | Overall Conservation Status | Trend CS | Measures via management of NNN (N) and/or agricultural nature management (A) |
|---|---|---|---|---|---|---|---|---|
| 1038 | Oostelijke witsnuitlibel | U2 | U2 | U2 | U2 | U2 | - | N |
| 1040 | Rivierrombout | FV | XX | FV | FV | FV | = | # (see below) |
| 1042 | Gevlekte witsnuitlibel | FV | U1 | FV | FV | U1 | = | A, N |
| 1048 | Groene glazenmaker | FV | U1 | U1 | U1 | U1 | - | A, N |
| 1076 | Teunisbloempijlstaart | FV | FV | FV | FV | FV | + | # |
| 1191 | Vroedmeesterpad | FV | U2 | U2 | U2 | U2 | = | A, N |
| 1197 | Knoflookpad | FV | U1 | U2 | U2 | U2 | + | A, N |
| 1203 | Boomkikker | FV | FV | U1 | U1 | U1 | + | A, N |
| 1214 | Heikikker | FV | FV | U1 | U1 | U1 | = | N |
| 1256 | Muurhagedis | FV | U2 | U1 | U1 | U2 | + | N |
| 1261 | Zandhagedis | FV | FV | U1 | U1 | U1 | + | N |
| 1283 | Gladde slang | FV | FV | U1 | U1 | U1 | = | N |
| 1309 | Gewone dwergvleermuis | FV | XX | XX | XX | XX | x | # |
| 1312 | Rosse vleermuis | FV | U2 | XX | XX | U2 | x | N |
| 1314 | Watervleermuis | FV | FV | XX | FV | FV | = | # |
| 1317 | Ruige dwergvleermuis | FV | XX | FV | U1 | U1 | = | A, N |
| 1320 | Brandts vleermuis | XX | U2 | XX | XX | U2 | x | N, A? |
| 1322 | Franjestaart | FV | FV | FV | FV | FV | + | # |
| 1326 | Gewone grootoorvleermuis | FV | FV | U1 | U1 | U1 | + | N |
| 1327 | Laatvlieger | XX | U1 | XX | U1 | U1 | x | N, A |
| 1329 | Grijze grootoorvleermuis | FV | U2 | FV | U1 | U2 | + | A, N |
| 1330 | Baardvleermuis | FV | U1 | XX | U1 | U1 | x | A, N |
| 1331 | Bosvleermuis | FV | XX | XX | XX | XX | x | N |
| 1332 | Tweekleurige vleermuis | FV | XX | U1 | U1 | U1 | x | A,N |
| 1339 | Hamster | U2 | U2 | U2 | U2 | U2 | - | A, N |
| 1341 | Hazelmuis | FV | U2 | U2 | U1 | U2 | + | A, N |
| 6182 | Noordse winterjuffer | FV | U1 | FV | U1 | U1 | = | N |
| 6284 | Rugstreeppad | FV | U1 | U1 | U1 | U1 | - | A, N |
| 6981 | Poelkikker | FV | FV | FV | FV | FV | + | A |

**#** indicates that because of the FV-status of these species hardly any specific measures are taken to enhance the species

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The status of Birds Directive species mainly living outside the Nature 2000 areas

With regard to the species of the Birds directive that occur in the Netherlands only the species that live for 50% or more outside of the Nature 2000 areas are presented and are taken in account in the following table.

| Species code | Species name, scientific | Species name, Dutch | Category (breeding / non-breeding) | Mean distance to population aim cf. Birds Directive | Conservation status (based on population trend, habitat quality + size & distribution trend) | RL status (only for breeding species) | Pecentage in N2000-areas (.. : species of agricultural areas mainly) | Priority of conservation measures | Measures in agricultural nature management (a) or in management of NNN (n) |
|---|---|---|---|---|---|---|---|---|---|
| A295 | Acrocephalus schoenobaenus | Rietzanger | Breeding | 45% | FV | TNB | 37% | 2 | ## |
| A229 | Alcedo atthis | IJsvogel | Breeding | 338% | FV | TNB | 16% | 2 | ## |
| **A222** | **Asio flammeus** | **Velduil** | Breeding | -8% | U1 | EB | 48% | 1 | a, n |
| **A861** | **Calidris pugnax** | **Kemphaan** | Breeding | -98% | U2 | EB | 38% | 1 | a, n |
| **A197** | **Chlidonias niger** | **Zwarte stern** | Breeding | -27% | U2 | BE | 43% | 1 | a, n |
| **A084** | **Circus pygargus** | **Grauwe kiekendief** | Breeding | -21% | U1 | EB | 2% | 1 | a, n |
| **A122** | **Crex crex** | **Kwartel-koning** | Breeding | -75% | U2 | BE | 22% | 1 | a, n |
| A480 | Cyanecula svecica | Blauwborst | Breeding | 92% | FV | TNB | 25% | 2 | ## |
| **A236** | **Dryocopus martius** | **Zwarte specht** | Breeding | 6% | U1 | TNB | 26% | 1 | n |
| **A153** | **Gallinago gallinago** | **Watersnip** | Breeding | -48% | U2 | BE | 39% | 1 | a, n |
| **A022** | **Ixobrychus minutus** | **Woudaap** | Breeding | -85% | U2 | EB | 39% | 1 | n |
| **A338** | **Lanius collurio** | **Grauwe klauwier** | Breeding | 84% | U1 | BE | 41% | 1 | a, n |
| **A246** | **Lullula arborea** | **Boom-leeuwerik** | Breeding | -4% | U1 | TNB | 43% | 1 | n |
| A072 | Pernis apivorus | Wespendief | Breeding | 0% | FV | TNB | 24% | 2 | ## |
| **A249** | **Riparia riparia** | **Oever-zwaluw** | Breeding | 25% | U1 | TNB | 14% | 1 | n |
| **A275** | **Saxicola rubetra** | **Paapje** | Breeding | -59% | U2 | BE | 50% | 1 | n |
| A276 | Saxicola torquatus | Roodborst-tapuit | Breeding | 175% | FV | TNB | 23% | 2 | ## |
| A004 | Tachybaptus ruficollis | Dodaars | Breeding | 25% | FV | TNB | 22% | 2 | ## |
| **A861** | **Calidris pugnax** | **Kemphaan** | Passage | -82% | U2 | | 26% | 1 | a, n |
| A887 | Uria aalge | Zeekoet | Passage | 100% | FV | | 5% | 2 | ## |
| **A053** | **Anas platyrhynchos** | **Wilde Eend** | Winter | 329% | U1 | | 34% | 1 | n |
| A394 | Anser albifrons albifrons | Kolgans | Winter | 324% | FV | | 19% | 2 | ## |
| A043 | Anser anser | Grauwe gans | Winter | 502% | FV | | 26% | 2 | ## |
| **A040** | **Anser brachyrhynchus** | **Kleine rietgans** | Winter | -62% | U2 | | 2% | 1 | n |
| **A701** | **Anser fabalis fabalis** | **Taigariet-gans** | Winter | -99% | U2 | | 2% | 1 | n |
| A702 | Anser fabalis rossicus | Toendrarietgans | Winter | 578% | FV | | 4% | 2 | ## |

| Species code | Species name, scientific | Species name, Dutch | Category (breeding / non-breeding) | Mean distance to population aim cf. Birds Directive | Conservation status (based on population trend, habitat quality + size & distribution trend) | RL status (only for breeding species) | Pecentage in N2000-areas (.. : species of agricultural areas mainly) | Priority of conservation measures | Measures in agricultural nature management (a) or in management of NNN (n) |
|---|---|---|---|---|---|---|---|---|---|
| A773 | Ardea alba | Grote zilverreiger | Winter | 9214% | FV | | 17% | 2 | ## |
| A045 | Branta leucopsis | Brandgans | Winter | 425% | FV | | 28% | 2 | ## |
| **A037** | **Cygnus columbianus bewickii** | **Kleine zwaan** | Winter | 89% | U1 | | 35% | 1 | a, n |
| A038 | Cygnus cygnus | Wilde zwaan | Winter | 907% | FV | | 24% | 2 | ## |
| A026 | Egretta garzetta | Kleine zilverreiger | Winter | 71% | FV | | 44% | 2 | ## |
| **A125** | **Fulica atra** | **Meerkoet** | Winter | 310% | U1 | | 23% | 1 | n |
| **A001** | **Gavia stellata** | **Roodkeel-duiker** | Winter | 100% | U1 | | 0% | 1 | n |
| A855 | Mareca penelope | Smient | Winter | 245% | FV | | 46% | 2 | ## |
| A889 | Mareca strepera | Krakeend | Winter | 623% | FV | | 25% | 2 | ## |
| A058 | Netta rufina | Krooneend | Winter | 474% | FV | | 13% | 2 | ## |
| A391 | Phalacrocorax carbo sinensis | Aalscholver | Winter | 68% | FV | | 45% | 2 | ## |
| **A140** | **Pluvialis apricaria** | **Goud-plevier** | Winter | 167% | U1 | | 50% | 1 | n |
| A005 | Podiceps cristatus | Fuut | Winter | 68% | FV | | 38% | 2 | ## |
| A004 | Tachybaptus ruficollis | Dodaars | Winter | 878% | FV | | 23% | 2 | ## |
| A142 | Vanellus vanellus | Kievit | Winter | 289% | FV | | 37% | 2 | a, n |

Explanation of the ##-sign: these species are protected by regular nature- and water management in and outside the Nature Network, but - due to their favourable conservation status - get less specific attention than the other species.

**Measures needed to maintain or restore favourable conservation status**

**A. Introduction**

A thorough study on the situation of all BHD-species in the Netherlands and an overview of the ***additional measures*** needed – *additional to the ongoing realization of enhancement of natural values as part of Dutch nature policy on national and provincial levels* - is available in the report "Naar een hoger doelbereik van de Vogel en Habitatrichtlijn in Nederland" (WEnR/WUR, februari 2020, see https://www.rijksoverheid.nl/documenten/rapporten/ 2020/02/29/naar-een-hoger-doelbereik-van-de-vogel--en-habitatrichtlijn-in-nederland).

The main additional measures that are listed in this report are:

1. additional enlargement of the habitats where species occur
2. additional improvement of the structure of the present habitats where species occur.
3. additional improvement of the quality of the present habitats where species occur.

The report states that for 84% of the BHD-habitats and species the main cause of the unfavourable conservation status is the unfavourable quality of the biotopes involved (a.o. due to eutrophication and lowering of groundwater tables). For 65% of the BHD-species and habitats there is also a shortage of sufficient space.

The species living mainly outside N2000 areas and with unfavourable conservation status (listed in the 2 tables in the previous paragraph) mainly occur in the following biotopes:
- Extensively used agricultural terrains: 16 HD-species, 10 BD-species
- Small standing waterbodies: 5 HD-species, 7 BD-species
- Bogs and mires: 3 HD-species, 9 BD-species
- Woodland and forests: 9 HD-species, 1 BD-species
- Lakes, streams and canals: 9 HD-species, 4 BD-species
- Heathlands and natural grasslands: 8 HD-species, 1 BD-species

This implicates that enlargement and quality improvement is needed for all these biotopes in addition to the already planned (and financed) improvement and enlargement of the NNN in the Netherlands.
At this moment however an estimate of the amount of ha's needed for enlargement and the amount of ha's where improvement is needed is not available except for the most endangered meadow birds.
For the meadow birds: see section B2.

**B. Management measures**

**B1. Nature management outside the Nature 2000 areas**

The total area in the National Nature Network (NNN) in the Netherlands under subsidized nature management by professional nature management organizations amounts to 485.100 ha (see 6th Report of the 12 provinces on the realization of nature policy / 6e Voortgangsrapportage Natuur dd September 2020).
Of this total area 150.760 ha has already been accounted for in the sections E.2.2 through to E.2.7.
That means that 334.340 ha is under subsidized nature management partly for the species discussed in this section.
The BHD-species in this section that the subsidized nature management aims to maintain or to restore to a better conservation status are indicated by n (for de the bird species) and by N for the HD-species in the last column of the tables in the paragraph on the conservation status of the species of this section.
The overall evaluation of the success of nature management in the Netherlands (see page 20 of the 6e Voortgangsrapportage Natuur dd September 2020) and the Compendium voor de Leefomgeving (https://www.clo.nl/indicatoren/nl1617-duiding-provinciale-indicatoren) indicates that the species of natural areas – at least those species that are monitored! – in general show stabilization since 2005.
It is clear however that not all species profit from the subsidy scheme for nature management and the professional nature management in the 485.100 ha of nature reserves in the NNN.
It is also quite clear that the present effort with regard to nature management has to be continued and will have to be increased for the species for whom the score is U1 or U2 for habitat area or for habitat quality.
The enlargement of the NNN in the Netherland is still on-going; national and provincial governments have made an agreement (the Natuurpact dd 2013) to enlarge the NNN with in total 80.000 ha; approximately 38.000 ha still has to be bought for this aim (see 6e Voortgangsrapportage Natuur).
Most of the new nature reserves will be realized to strengthen the Nature 2000 areas.

**B2. Agricultural nature management in agricultural areas** *(not included in E.2.4 (Grasslands) or E2.5 Other agro-ecosystems or E.2.8 Freshwater habitats)*

The measures for the BHD-species listed above that occur mainly or for a large part in agricultural areas are protected and enhanced by the Dutch subsidies for agricultural nature management.
These measures are listed and described on the website of BIJ12, the organization that coordinates the efforts of the 12 provinces with respect to agricultural nature management; see:
https://www.bij12.nl/assets/FichesANLb2016november2014defm.pdf.
The measures for the 9 species that are marked with A in the last column of the table on the HD, Annex IV-species and with a in the table for the 9 bird species under the Birds Directive are all described in this publication.
In this publication the type of measures needed are described, but not the amount of ha's in which the measures should be taken to ensure a favourable conservation status

Recently (on 31-03-2021) an evaluation of the effectiveness of the Dutch system of agricultural nature management was published by the Dutch national government. See:
https://www.rijksoverheid.nl/documenten/rapporten /2021/03/31/ stelselvernieuwing-in-uitvoering.
According to this publication the amounts of agricultural land with nature management contracts in 2019 were as follows (see page 58 of the report):
Grasslands: 78.205 ha; supporting Nature 2000: 61.200 ha (reported in section E.2.4).
Therefor solely for BHD-species outside N2000: 17.005 ha
Arable fields: 4.631 ha, supporting Nature2000: 850 ha (reported in section E.2.5).
Therefor solely for BHD-species outside N2000: 3.781 ha
Landscape elements in predominantly dry areas: 7.094 ha
Landscape elements in areas with high water table's: 2.788 ha
Small water bodies in agricultural surroundings: 2.937 ha
Total agricultural area with nature management subsidy for maintaining BHD-species outside the N2000 areas: 33.605 ha
The evaluation in this report states that it is unclear if this effort will be effective enough to bring the targeted BHD-species in a favourable conservation status.
Until recently the monitoring of wild species in the Netherlands showed that the monitored species in nature reserves show a stabilization in numbers; the decline seems to have stopped. In agricultural areas the decline seems to continue.

For the specially endangered meadow birds the so called "Aanvalsplan Grutto" has recently (February 2021) been endorsed by the Dutch parliament.
See: https://www.vogelbescherming.nl/docs/531bce4d-4124-4b5b-ba36-430c87fcb95e.pdf.
This plan aims to invest ca. 40 mln/yr extra in enhanced management in 30 areas of 1000 ha for meadow birds. To ensure success adjustments will have to be made with regard to the soil and water-situation in these 30 areas. The one-off costs for these adjustments are estimated at 35 mln.

**C. Nature (re)development measures**

1. Construction of special biotopes for coastal birds and dune insects [based on the contribution of the province Zeeland]
   This measure for the benefit of colony breeding birds (Sterna hirundo, Thalasseus sandvicensis, Sternula albifrons), beach breeders (Charadrius hiaticula, Charadrius alexandrinus) and the Larus fuscus and coastal bees (Colletes halophilus and Epeolus tarsalis)

2. Construction of migration routes for terrestrial species [based on the contribution of the province Noord-Brabant]
   Intended for reptiles, amphibians, insects, small mammals (a.o. nearly all bat species, Mustela erminea, Mustela nivalis, Mustela putorius, Erinaceus europaeus, Martes martes, Sciurus vulgaris, Lutra Lutra, Castor fiber) and various Red Listed vascular plants.

3. Construction of fish migration facilities [based on the contribution of the province Noord-Brabant]
   Intended for Rhodeus amarus, Lampetra planeri, Lampetra fluviatilis, Misgurnus fossilis, Cobitis taenia

4. Measures for birds in urban areas [based on the contribution of the province Zeeland]
   For the birds species Passer domesticus, Apus apus and Delichon urbicum.

5. Additional measures for species in agricultural areas and in small nature reserves outside the National Nature Network [NNN]. [based on the contribution of the province Drenthe]
   For the benefit of Athene noctua, Streptopelia turtur, Alauda arvensis, Perdix perdix, Circus aeruginosus, Microtus oeconomus Arenicola, Mustela erminea, Mustela nivalis, Mustela putorius,

Martes martes, Sciurus vulgaris, Triturus cristatus, Rana arvalis, Pelophylax lessonae, Hyla arborea, Pelobates fuscus, Lacerta agilis, Coronella austriaca, Vipera berus, Natrix natrix, Anguis fragilis, Vertigo moulinsiana, Vertigo angustior, Dytiscus latissimus, and Aeshna viridis.
*N.B. with the exception of Athene noctua, Streptopelia turtur, Alauda arvensis, and Circus aeruginosus, these species are also the majority for which the terrestrial migration route s are intended.*

**Prioritization of measures to be implemented during the next MFF period**

Priority has to be given to the improvement and enlargement of biotopes that are especially important for the species with unfavourable conservation status:

- Extensively used agricultural terrains: 16 HD-species, 10 BD-species
- Small standing waterbodies: 5 HD-species, 7 BD-species
- Bogs and mires: 3 HD-species, 9 BD-species
- Woodland and forests: 9 HD-species, 1 BD-species
- Lakes, streams and canals: 9 HD-species, 4 BD-species
- Heathlands and natural grasslands: 8 HD-species, 1 BD-species

**List of prioritized measures to be carried out, and estimated costs for these measures**

1. Completion of the enlargement of the NNN (38.500 ha, 41.500 ha was already accounted for in section E2)
2. Continuation of professional nature management in the NNN (334.340 ha)
3. Continuation and expansion of agricultural nature management (10.860 ha) for agricultural management of connection zones (“natte en droge dooradering”)
4. Action plan for meadow birds (2700 ha extra)
5. Additional improvement of the biotopes of the species with unfavourable conservation status
6. Additional enlargement of the biotopes of the species with unfavourable conservation status
7. Implementation of the National bee strategy, phases II and III
8. Construction of special biotopes for coastal birds and dune insects
9. Construction of migration routes for terrestrial species
10. Construction of fish migration facilities
11. Measures for birds in urban areas
12. Additional measures for species in agricultural areas and in small nature reserves outside the National Nature Network [NNN].

*(#) : The other forms of agricultural nature management have already been listed and counted under E.2.4, E.2.5 and E.2.8.*

*Table E-27[99]. Estimated cost of prioritized measures - Type of specific measures and programmes not elsewhere specified*

*These costs are estimated based on an extrapolation of data provided by the provinces Zeeland, Drenthe, and Noord-Brabant.*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| Completion of the enlargement of the NNN | One-off | PM | PM | |
| Continuation of professional nature management in the NNN | annually | 3.335,1 | 179.473.894 | LIFE |
| Continuation and expansion of agricultural nature management for N2000-species. Expansion from 9.882 ha (in 2019(*)) to 10.860 ha on average in the new PAF-period [100] | annually | 108,6 | 28.920.879 | EAFRD |
| Action plan for meadow birds (18.000 ha extra and 9.000 ha with more restrictions than in 2020); extra management costs | annually | 270 | 20.000.000 | EAFRD |
| Action plan for meadowbirds | One off | 180 | 35.000.000 | LIFE |
| Implementation of National bee strategy phases II and III | Annually | Not applicable | 500.000 | |
| Construction of special biotopes for coastal birds and dune insects | One-off | To be further determined | 2.500.000 (**) | LIFE |
| Construction of migration routes for terrestrial species; cost of acquisition and of rearrangement / restructuring of terrain for this purpose | One-off | 32,9 (4,7 per year) | 388.710.000 (**) | LIFE |
| Construction of fish migration facilities | One-off | To be further determined | 43.300.000 (**) | LIFE |
| Measures for birds in urban areas | One-off | Not applicable | 5.900.000 (**) | LIFE |
| Additional measures for species in agricultural areas and in small nature reserves outside the National Nature Network [NNN]. | One-off | To be further determined | 18.700.000 (**) | LIFE |
| Total (annually) | | | 359.824.273 (***) | |

(*): The 9.882 ha is the sum of the ha's with two types of agricultural nature management: dry and wet "veins" or connectivity elements in agricultural areas. See the recent report on agricultural nature management that was sent to the Dutch parliament early in 2021: stelselvernieuwing-in-uitvoering.

(**): see annex 6 for the explanation of the calculation of the costs for these 5 measures.

(***) This might seem a quite large sum for the species-specific measures. The measures however cover a very large part of the National Nature Network in the Netherlands and among others consist of the management of 333.510 ha of nature and of the agricultural nature management in 10.860 ha.

**Expected results for the species targeted by the network**

*No clear expected results can be given for the species that are mainly dependent on nature management as shown in the tables on page 70, 71 and 72. But the general trend of the last few decades (see Compendium of the*

[99] See Annex 8: Sheet 'Prov+RWS', H216:H218

[100] See Annex 6 for the calculation of the target value and of the estimated costs

*Leefomgeving, as mentioned elsewhere in this section) is that the decline of nearly all species that are mainly dependent on natural area's has come to a stand still; decline has stopped. For many species this is not enough; populations have to grow again to a higher level to be viable and vital. In the tables on page 70 to 72 the species for which this is most urgent are indicated in red.*

*The agricultural nature management as mentioned in table E27 comprises only the management contracts with farmers that aim to ensure restoration of wet and dry "veins" in our agricultural areas. The results that the Netherlands aim for with this type of agricultural nature management is on the one hand the restoration and enhancement of connectivity for N2000-species and on the other hand strengthening the survival chances for a whole range of other species – among them a large number of insect species - in the intensively used agricultural landscapes of the Netherlands. No exacts aims or results per species have been formulated for agricultural nature management in general except for the meadow birds.*

*The Action plan for meadowbirds ("Het Aanvalplan Grutto") aims to create 30 areas of 1000 ha; in each location with 200 ha of wetland with high water tables and 800 ha of very extensive agricultural management plus heavy restrictions for farming. With the realization of this plan the population of all the heavily endangered and typically Dutch meadowbirds should be restored to an acceptable level; it is expected that the downward spiral will be changed to growth of the populations. For more information see the link already mentioned.*

*Results targeted by the 5 last prioritized measures in the table E27:,*

1. Rehabilitation and resettlement of colony brooders, *Larus fuscus* and coastal dune insects

2. Restoration and enhancement of migration and exchange opportunities for a long range of mammals, amphibians, reptiles and insects.

3. Restoring and strengthening migration and exchange possibilities for protected fish species

4. Restoration and conservation of typical birds of urban areas such as *Passer domesticus*, *Apus apus* and *Delichon urbicum*

5. Restoration and conservation of a long list of protected species in agricultural areas and in small nature reserves outside the National Nature Network. See the appendices.

**Expected results: other benefits**

Important other benefits:

The nature management scheme for the area's belonging to the NNN mentioned in this section have important benefits for recreation and leisure in the Netherland; more than 90% of all area's under subsidized nature management are open for visitors. Only for entering the National Park the Veluwe and several dune-reserves an entrance fee is asked.

The nature management in the above mentioned 333.510 ha benefits not only the protected species living there but also the preservation of clean groundwater and to the restoration of air quality and surface water quality.

Furthermore, the natural area's in this subsidy scheme work as an important carbon sink and as a source of clean drinking water.

The benefits of the NNN are described more completely in the Atlas of Natural Capital in the Netherlands (see: https://atlasnatuurlijkkapitaal.nl/).

Other benefits of the measures proposed for protected species are:

- Preservation of natural pollinators

- Protection from insect plagues

- Preservation of the cultural heritage in the form of characteristic landmarks, landscape elements and landscape structures

- Absorption of noise / preservation of area's with high quietness

- Protection against soil erosion

- Production of wood and other forms of biomass

- Protection against flooding

With regard to all these benefits maps are available in the Atlas of the Natural Capital of the Netherlands.

## E.3.2. Prevention, mitigation and compensation of damage caused by protected species

**Current state of play on prevention, mitigation and compensation of damage**

For prevention and mitigation of damage in agriculture and grasslands for cattle breeding several measures can be taken. These measures are to be found at the website of BIJ12: see https://www.bij12.nl/onderwerpen/faunazaken.
The measures listed on that website are not an exhaustive list of all applicable measures. If a certain combination of crop and animal species is not listed, this does not mean that no measures can be taken to limit or prevent the damage.
In order to be eligible for compensation in the event of fauna damage, it is often mandatory to take measures to prevent and limit the damage. In many cases, an exemption is required to prevent or mitigate damage by repelling an animal species, possibly with supportive shooting. The Fauna Management Units (Fauna Beheereenheden - FBE) in the 12 provinces provide authorizations on request to make use of the exemption. The application and adequate use of the exemption are further explained on the BIJ12 website, see https://www.bij12.nl/onderwerpen/faunazaken/. In this way it is ensured that land users first take all reasonably available preventive measures before proceeding to limit the damage by chasing and/or killing the animals that cause the damage.

**Necessary measures**

In addition to the system of prevention and mitigation of damage described above a system of compensation payments is necessary to ensure that protected species like the geese-species that graze on farmland and the wolf are tolerated by the farmers.
To ensure an acceptable level of tolerance for the establishment of the wolf in the Netherlands subsidies were introduced for landowners (mainly sheep farmers) that suffer from damage to their livestock due to attacks by wolves.

**Prioritization of measures to be implemented during the next MFF period**

The Table E-28 includes all costs expected to be needed for the above measures in the period 2021-2027, based on current costs incurred for prevention, mitigation and compensation of damage caused by protected species. It is possible that the arrival of the wolf will lead to higher expenses than in the past.

**List of prioritized measures to be carried out, and estimated costs for these measures**

a) Compensation payments to landowners and land-users (mainly farmers) for damage to their crops and livestock caused by protected species.
b) Subsidies for landowners and land-users (mainly farmers) for protecting their livestock and/or their crops (preventive measures)

*Table E-28[101]. Estimated costs of priority actions - Prevention, mitigation and compensation of damage caused by protected species*

| Name and brief description of the measures | Type of measure* | Target value (1=100ha) | Estimated costs in euros (on an annual basis) | Possible source of EU co-financing |
|---|---|---|---|---|
| Damage compensation (extrapolation from historical data) | Annually | - | 21.588.000 | |
| Measures taken by provinces, among others: subsidies for prevention-measures to protect sheep from wolves | One-off | - | 344.000 | |

[101] See Annex 8: Sheet 'Prov+RWS', H222:H224

| | | | | |
|---|---|---|---|---|
| **Total (annually)** | | | 21.637.143 | |

* Indicate whether the measure is recurrent or one-off.

**Expected results for the species targeted by the network**

Expected results:
Rise of the numbers of protected geese-species in the Netherlands;
Rise of the number of wolves in the Netherlands.

**Expected results: other benefits**

Expected other benefits:

The growing number of wolves might help restore populations of other animals to a more "natural" size and might help restoring natural processes in populations of other protected animals.

An important other benefit is keeping up public support for the maintenance of natural values in the Netherlands.

### E.3.3. References for additional species-specific measures not related to specific ecosystems or habitats

National Bee Strategy: https://www.rijksoverheid.nl/onderwerpen/natuur-en-biodiversiteit/documenten/rapporten/2018/01/22/nationale-bijenstrategie-bed--breakfast-for-bees
Compendium voor de Leefomgeving: https://www.clo.nl/indicatoren/nl1617-duiding-provinciale-indicatoren
BIJ12: efforts of provinces with respect to agricultural nature management:
https://www.bij12.nl/assets/FichesANLb2016november2014defm.pdf
Evaluation agricultural nature management:
https://www.rijksoverheid.nl/documenten/rapporten/2021/03/31/stelselvernieuwing-in-uitvoering

Aanvalsplan Grutto: https://www.vogelbescherming.nl/docs/531bce4d-4124-4b5b-ba36-430c87fcb95e.pdf

# F. Further added value of the priority actions

The Netherlands' Ministry of Agriculture, Nature and Food Quality is involved in a number of interlinked initiatives that are aimed to provide further insights in the benefits of measures taken to achieve objectives of nature and biodiversity policy on other economic sectors and policy initiatives. With regard to the latter there is a strong link with the measures taken as part of the national climate programme ('Klimaatakkoord'), which comprises a number of activities and budget allocations that are directly related to Natura 2000 and (other) sensitive nature areas in the Netherlands. In addition, there are strong links with the Climate Buffer programme, which comprise contributions to a range of related policy objectives, in particular related to climate adaptation and nature development.

In addition, a number of programmes and project are initiated with a view to assessing and developing areas specific cooperation opportunities, with the aim to ensure that all land users in and in the areas surrounding Natura 2000 sites benefit from activities undertaken to promote biodiversity and nature values. This entails that benefits for land users e.g. from agriculture, recreation and tourism are identified and developed, and earning models are linked to the achievement of nature and biodiversity objectives. A prominent example of these initiatives is the project LIFE IP All4Biodiversity, in which the ministries of LNV and I&W, five provinces and representatives of farmers organisations and NGOs cooperate on this topic. Furthermore, preparations have started for the development of a LIFE Strategic Nature Project which aims at mainstreaming of nature and biodiversity objectives in other policy areas.

Special measures for pollinators

The main objective of the National Bee Strategy (Nationale Bijenstrategie) is to ensure that pollinators and pollination are sustainably promoted and maintained by 2030. An important part of the strategy is the Kennisimpuls Bestuivers (Knowledge Impulse Pollinators) (2017-2021). The central objective is to contribute to the conservation and promotion of pollinators through knowledge development, knowledge dissemination and awareness-raising so that they can continue to play their role in food production and natural ecosystems in the long term. The emphasis is on the wild pollinating species (bumblebees, solitary bees and hoverflies). Target groups are all parties participating in the bee strategy. In addition, other studies are set out and annual meetings are organized.

In addition to the three core themes of the "Bee Strategy" including the promotion of biodiversity; the improvement of the interaction between agriculture and nature; and providing and exchanging knowledge to beekeepers to improve the health of the honeybee, there is also a positive impact from the Bee Strategy on other topics including: knowledge, international relevance, consumers and citizens, (semi-)governments and Common Agricultural Policy (CAP or GLB in Dutch). Within these abovementioned topics the following connections can be found:

- *Knowledge*
  - Development and advancements, including in (green) education
  - The focus on bees and pollination in (green) education can contribute to the internalisation of a bee-friendly attitude in agriculture/horticulture and green maintenance businesses
  - The funded program "Knowledge impulse" (in Dutch: "Kennisimpuls") focusing on knowledge development, knowledge exchange and to raise awareness about pollinators: bumblebees, solitary bees and hoverflies is set up by the Ministry of Agriculture, Nature and Food Quality (Dutch Ministry of LNV)
  - Scientific knowledge networks (such as Super-B) contribute to the development and circulation of knowledge about pollinators
- *International relevance*
  - The Dutch initiative to form a developing international network: the "Coalition of the Willing on Pollinators" (letter to parliament 31532 no. 174)

- The experience gained from making the recommendations as suggested by the IPBES report can be applies and shared in the coalition

- *Consumers and citizens*
  - The stimulation of behavioural change by creating awareness and active involvement among citizens and consumers. This can be achieved in NL by e.g. stimulating the development of guaranteed bee-friendly food products
- *(semi-)governments*
  - Generating knowledge at governmental level
  - Promoting to decorate/manage governmental sites according to a bee-friendly standard
  - Identifying correct management measures to conserve and promote (wild) bees
- Common Agricultural Policy
  - Exploring the possibilities for a bee-friendly agricultural production in the CAP, e.g. to develop and apply bee-friendly sustainable greening measures and to stimulate agri-environmental management. This can be achieved by:
    - Using CAP financial support to promote/strengthen pollinators; create more space for bees on farms and in the surrounding area; and to offer tailor-made solutions.
    - To explore bee-friendliness in the existing set of CAP payments (pillars 1 and 2)
    - The realisation in practice by politics, policy and the agricultural sector

**References**


Klimaatakkoord, chapter on land use: https://www.klimaatakkoord.nl/binaries/klimaatakkoord/documenten/publicaties/2019/06/28/klimaatakkoord-hoofdstuk-landbouw-en-landgebruik/klimaatakkoord-c4+Landbouw+en+gebruik.pdf

Climate buffers: https://www.klimaatbuffers.nl/

LIFE IP All4Biodiversity: https://www.samenvoorbiodiversiteit.nl/updates/provincies-starten-samenwerking-rond-verdienmodellen-voor-natuur/227 (article on project start, project website will be launched shortly).

# Glossary

| | English | Dutch |
|---|---|---|
| **BD** | Birds Directive | Vogel Richtlijnen (VR) |
| **BPRW** | Management and Development Plan for National Waters | Beheer- en Ontwikkelplan voor de Rijkswateren |
| **BIJ12** | Implementing organisation of the twelve Dutch provinces | Uitvoeringsorganisatie voor de twaalf provincies. |
| **CBS** | Statistics Netherlands | Centraal Bureau voor de Statistiek |
| **CF** | Cohesion Fund | Cohesiefonds |
| **EAFRD** | European Agricultural Fund for Rural Development | Europees Landbouwfonds voor Plattelandsontwikkeling (ELfPo) |
| **EIA** | Environmental Impact Assessment | Milieu Effecten Rapport |
| **EMMF** | European Maritime and Fisheries Fund | Europees Fonds voor Maritieme Zaken en Visserij (EFMZV) |
| **ERDF** | European Regional Development Fund | Europees Fonds voor Regionale Ontwikkeling (EFRO) |
| **HD** | Habitats Directive | Habitat Richtlijnen (HR) |
| **IPN** | Inter-administrative programme directorate Nitrogen | Interbestuurlijk Programma Stikstof |
| **IPO** | Inter Provincial Consult | Inter Provinciaal Overleg |
| **KRM** | Marine Strategy Framework Directive | Kaderrichtlijn Marien |
| **KRW** | Water Framework Directive | Kaderrichtlijn Water |
| **LNV** | Ministry of Agriculture, Nature and Food Quality | Ministerie van Landbouw, Natuur en Voedselkwaliteit |
| **MIRT** | Multi-annual plan Infrastructure, Area and Transport | Meerjarenplan Infrastructuur, Ruimte en Transport |
| | Natura 2000 Target System | Natura 2000 Doelensysteem |
| **NCA** | Nature Conservation Act | |
| **NDFF** | National Database Flora and Fauna | Nationale Databank Flora en Fauna |
| **NEM** | Ecological Monitoring Network | Netwerk Ecologische Monitoring |
| **NNN** | Nature Network Netherlands | Natuur Netwerk Nederland |
| **NOVI** | National Strategy on Spatial Planning and Environment | Nationale Omgevingsvisie |
| **NWP** | National Water Programme | Nationaal Water Programma |
| **MFF** | Multi-annual Financial Framework | |
| **MIRT** | Multi-annual plan Infrastructure, Area and Transport | Meerjarenprogramma Infrastructuur, Ruimte en Transport |
| **PAGW** | Programmatic Approach for Large Waters | Programmatische Aanpak Grote Wateren |
| **PAEGW** | Programmatic Approach Ecology of Large Waters | Programmatische Aanpak Ecologie Grote Wateren |
| **PAS** | Nitrogen Approach Programme | Programma Aanpak Stikstof |
| **RWS** | Directorate-General for Public Works and Water Management | Rijkswaterstaat |
| **SCI** | Sites of Community Importance | |
| **SDF** | Standard Data Form | |
| **SNL** | Nature and Landscape Subsidy Scheme | Subsidiestelsel Natuur en Landschap |
| **SPA** | Special Protection Areas | |
| **TMAP** | Trilateral Monitoring and Assessment Programme | Trilaterale Monitoring – en Beoordelingsprogramma |
| **UvW** | Union of Water Authorities | Unie van Waterschappen |
| **VEWIN** | Association of Dutch Water Companies | Vereniging van drinkwaterbedrijven in Nederland |
| **VNG** | Association of Dutch Municipalities | Vereniging Nederlandse Gemeenten |
| **WOT** | Legal Investigation Duties | Wettelijke Onderzoeks Taken |
| **Wnb** | Nature Conservation Act | Wet Natuurbehoud |
| **WFD** | Water Framework Directive | Kaderrichtlijn Water (KRW) |
| | Environment and Planning Act | Omgevingswet |

# Appendices Overview

Included in this document

1. NL list of habitat types of Annex I of the Habitats Directive
2. NL list of species of Annex II of the Habitats Directive
3. NL lists of birds on Annex I and of migratory birds
4. Overview of the Natura 2000 sites in the Netherlands
5. Legal and administrative provisions for protection and management of Natura 2000 sites
6. Calculation of target values and costs of agricultural nature management

Separate – can be requested at the ministry of Agriculture, Nature and Food Quality

7. Report RHDHV calculation of costs for PAF'21-'27
8. Excel Tables Annex to Report RHDHV
9. State budget 2020

# Annex 1 - NL list of habitat types of Annex I of the Habitats Directive

Bold = Habitat types in Large Waters

| Code | NL Name | EN Name |
|---|---|---|
| Coastal habitats | | |
| **H1110** | **Permanent overstroomde zandbanken** | **Sandbanks which are slightly covered by sea water all the time** |
| **H1130** | **Estuaria** | **Estuaries** |
| **H1140** | **Slik- en zandplaten** | **Mudflats and sandflats not covered by seawater at low tide** |
| **H1160** | **Grote baaien** | **Large shallow inlets and bays** |
| **H1170** | **Riffen** | **Reefs** |
| **H1310** | **Zilte pionierbegroeiingen** | **Salicornia and other annuals colonizing mud and sand** |
| **H1320** | **Slijkgrasvelden** | **Spartina swards (Spartinion maritimae)** |
| **H1330** | **Schorren en zilte graslanden** | **Atlantic salt meadows (Glauco-Puccinellietalia maritimae)** |
| Dune habitats | | |
| **H2110** | **Embryonale duinen** | **Embryonic shifting dunes** |
| **H2120** | **Witte duinen** | **Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")** |
| **H2130*** | **Grijze duinen** | **Fixed coastal dunes with herbaceous vegetation ("grey dunes")** |
| **H2140*** | **Duinheiden met kraaihei** | **Decalcified fixed dunes with Empetrum nigrum** |
| **H2150*** | **Duinheiden met struikhei** | **Atlantic decalcified fixed dunes (Calluno-Ulicetea)** |
| **H2160** | **Duindoornstruwelen** | **Dunes with Hippophaë rhamnoides** |
| **H2170** | **Kruipwilgstruwelen** | **Dunes with Salix repens ssp. argentea (Salicion arenariae)** |
| **H2180** | **Duinbossen** | **Wooded dunes of the Atlantic, Continental and Boreal region** |
| **H2190** | **Vochtige duinvalleien** | **Humid dune slacks** |
| **H2310** | **Stuifzandheiden met struikhei** | **Dry sand heaths with Calluna and Genista** |
| **H2320** | **Binnenlandse kraaiheibegroeiingen** | **Dry sand heaths with Calluna and Empetrum nigrum** |
| **H2330** | **Zandverstuivingen** | **Inland dunes with open Corynephorus and Agrostis grasslands** |
| Freshwater habitats | | |
| H3110 | Zeer zwakgebufferde vennen | Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae) |
| H3130 | Zwakgebufferde vennen | Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea |
| **H3140** | **Kranswierwateren** | **Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.** |
| **H3150** | **Meren met krabbenscheer en fonteinkruiden** | **Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation** |
| H3160 | Zure vennen | Natural dystrophic lakes and ponds |
| **H3260** | **Beken en rivieren met waterplanten** | Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho- Batrachion vegetation |

| Code | NL Name | EN Name |
|---|---|---|
| **H3270** | **Slikkige rivieroevers** | **Rivers with muddy banks with Chenopodion rubri p.p. and Bidention p.p. vegetation** |
| **Heath & scrub** | | |
| H4010 | Vochtige heiden | Northern Atlantic wet heaths with Erica tetralix |
| H4030 | Droge heiden | European dry heaths |
| **Sclerophyllous scrubs** | | |
| H5130 | Jeneverbesstruwelen | Juniperus communis formations on heaths or calcareous grasslands |
| **Grasslands** | | |
| H6110* | Pionierbegroeiingen op rotsbodem | Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi |
| **H6120*** | **Stroomdalgraslanden** | **Xeric sand calcareous grasslands** |
| H6130 | Zinkweiden | Calaminarian grasslands of the Violetalia calaminariae |
| H6210 | Kalkgraslanden | Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco- Brometalia) (* important orchid sites) |
| H6230* | Heischrale graslanden | Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) |
| H6410 | Blauwgraslanden | Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) |
| **H6430** | **Ruigten en zomen** | **Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels** |
| **H6510** | **Glanshaver- en vossenstaarthooilanden** | **Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)** |
| **Bogs, mires & Fens** | | |
| H7110* | Actieve hoogvenen | Active raised bogs |
| H7120 | Herstellende hoogvenen | Degraded raised bogs still capable of natural regeneration |
| **H7140** | **Overgangs- en trilvenen** | **Transition mires and quaking bogs** |
| H7150 | Pioniervegetaties met snavelbiezen | Depressions on peat substrates of the Rhynchosporion |
| H7210* | Galigaanmoerassen | Calcareous fens with Cladium mariscus and species of the Caricion davallianae |
| H7220* | Kalktufbronnen | Petrifying springs with tufa formation (Cratoneurion) |
| H7230 | Kalkmoerassen | Alkaline fens |
| **Forests** | | |
| H9110 | Veldbies-beukenbossen | Luzulo-Fagetum beech forests |
| H9120 | Beuken-eikenbossen met hulst | Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion) |
| H9160 | Eiken-haagbeukenbossen | Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli |
| H9190 | Oude eikenbossen | Old acidophilous oak woods with Quercus robur on sandy plains |
| H91D0* | Hoogveenbossen | Bog woodland |

| Code | NL Name | EN Name |
|---|---|---|
| **H91E0*** | **Vochtige alluviale bossen** | **Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)** |
| **H91F0** | **Droge hardhoutooibossen** | **Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ulmenion minoris)** |

* priority habitat types

# Annex 2 - NL list of species of Annex II of the Habitats Directive

Bold = species in Large Waters

| Code | Scientific Name | NL Name |
|---|---|---|
| **Mammals** | | |
| **H1318** | **Myotis dasycneme** | **Meervleermuis** |
| H1321 | Myotis emarginatus | Ingekorven vleermuis |
| H1324 | Myotis | Vale vleermuis |
| H1337 | Castor fiber | Bever |
| **H1340*** | **Microtus oeconomus arenicola** | **Noordse woelmuis** |
| **H1351** | **Phocoena** | **Bruinvis** |
| **H1364** | **Halichoerus grypus** | **Grijze zeehond** |
| **H1365** | **Phoca vitulina** | **Gewone zeehond** |
| H1355 | Lutra | Otter |
| **Amphibians** | | |
| H1166 | Triturus cristatus | Kamsalamander |
| H1193 | Bombina variegata | Geelbuikvuurpad |
| **Fish** | | |
| **H1095** | **Petromyzon marinus** | **Zeeprik** |
| H1096 | Lampetra planeri | Beekprik |
| **H1099** | **Lampetra fluviatilis** | **Rivierprik** |
| **H1102** | **Alosa** | **Elft** |
| **H1103** | **Alosa fallax** | **Fint** |
| **H1106** | **Salmo salar** | **Zalm** |
| **H1134** | **Rhodeus sericeus amarus** | **Bittervoorn** |
| **H1145** | **Misgurnus fossilis** | **Grote modderkruiper** |
| **H1149** | **Cobitis taenia** | **Kleine modderkruiper** |
| **H1163** | **Cottus gobio** | **Rivierdonderpad** |
| **Invertebrates** | | |
| **H1014** | **Vertigo angustior** | **Nauwe korfslak** |
| H1016 | Vertigo moulinsiana | Zeggekorfslak |
| **H1037** | **Ophiogomphus cecilia** | **Gaffellibel** |
| H1042 | Leucorrhinia pectoralis | Gevlekte witsnuitlibel |
| H1059 | Maculinea teleius | Pimpernelblauwtje |
| H1060 | Lycaena dispar | Grote vuurvlinder |
| H1061 | Maculinea nausithous | Donker pimpernelblauwtje |
| H1078* | Callimorpha quadripunctaria | Spaanse vlag |
| H1081 | Dytiscus latissimus | Brede geelgerande watertor |
| H1082 | Graphoderus bilineatus | Gestreepte waterroofkever |
| H1083 | Lucanus cervus | Vliegend hert |
| H4056 | Anisus vorticulus | Platte schijfhoren |
| **Plants** | | |
| H1387 | Orthotrichum rogeri | Tonghaarmuts |
| H1393 | Drepanocladus vernicosus | Geel schorpioenmos |
| H1614 | Apium repens | Kruipend moerasscherm |
| H1831 | Luronium natans | Drijvende waterweegbree |
| **H1903** | **Liparis loeselii** | **Groenknolorchis** |

* priority species

# Annex 3 - NL lists of birds on Annex I and of migratory birds

**Birds Annex I (art. 4.1)**

| Code | Scientific name | NL naam | Breeding or non-breeding bird* |
|---|---|---|---|
| **A001** | **Gavia stellata** | **Roodkeelduiker** | **N** |
| **A002** | **Gavia arctica** | **Parelduiker** | **N** |
| **A007** | **Podiceps auritus** | **Kuifduiker** | **N** |
| **A021** | **Botaurus stellaris** | **Roerdomp** | **B** |
| **A022** | **Ixobrychus minutus** | **Woudaap** | **B** |
| **A026** | **Egretta garzetta** | **Kleine zilverreiger** | **B+N** |
| **A027** | **Egretta alba** | **Grote zilverreiger** | **B+N** |
| **A029** | **Ardea purpurea** | **Purperreiger** | **B** |
| **A034** | **Platalea leucorodia** | **Lepelaar** | **B+N** |
| **A037** | **Cygnus columbianus** | **Kleine zwaan** | **N** |
| **A038** | **Cygnus cygnus** | **Wilde zwaan** | **N** |
| **A042** | **Anser erythropus** | **Dwerggans** | **N** |
| **A045** | **Branta leucopsis** | **Brandgans** | **N** |
| **A068** | **Mergus albellus** | **Nonnetje** | **N** |
| **A072** | **Pernis apivorus** | **Wespendief** | **B** |
| **A075** | **Haliaeetus albicilla** | **Zeearend** | **N** |
| **A081** | **Circus aeruginosus** | **Bruine kiekendief** | **B** |
| **A082** | **Circus cyaneus** | **Blauwe kiekendief** | **B** |
| A084 | Circus pygargus | Grauwe kiekendief | B |
| **A094** | **Pandion haliaetus** | **Visarend** | **N** |
| **A103** | **Falco peregrinus** | **Slechtvalk** | **N** |
| A107 | Tetrao tetrix | Korhoen | B |
| **A119** | **Porzana porzana** | **Porseleinhoen** | **B** |
| **A122** | **Crex crex** | **Kwartelkoning** | **B** |
| A127 | Grus grus | Kraanvogel | N |
| **A132** | **Recurvirostra avosetta** | **Kluut** | **B+N** |
| **A138** | **Charadrius alexandrinus** | **Strandplevier** | **B+N** |
| **A140** | **Pluvialis apricaria** | **Goudplevier** | **N** |
| **A151** | **Philomachus pugnax** | **Kemphaan** | **B+N** |
| **A157** | **Limosa lapponica** | **Rosse grutto** | **N** |
| **A176** | **Larus melanocephalus** | **Zwartkopmeeuw** | **B** |
| **A177** | **Larus minutus** | **Dwergmeeuw** | **N** |
| **A190** | **Sterna caspia** | **Reuzenstern** | **N** |
| **A191** | **Sterna sandvicensis** | **Grote stern** | **B+N** |
| **A193** | **Sterna hirundo** | **Visdief** | **B+N** |
| **A194** | **Sterna paradisaea** | **Noordse stern** | **B** |
| **A195** | **Sterna albifrons** | **Dwergstern** | **B** |
| **A197** | **Chlidonias niger** | **Zwarte stern** | **B+N** |
| **A222** | **Asio flammeus** | **Velduil** | **B** |
| A224 | Caprimulgus europaeus | Nachtzwaluw | B |
| **A229** | **Alcedo atthis** | **IJsvogel** | **B** |
| A236 | Dryocopus martius | Zwarte specht | B |
| A246 | Lullula arborea | Boomleeuwerik | B |
| A255 | Anthus campestris | Duinpieper | B |
| **A272** | **Luscinia svecica** | **Blauwborst** | **B** |
| A338 | Lanius collurio | Grauwe klauwier | B |

** B = Breeding bird, N = Non-breeding bird*

| Code | Scientific name | NL namw | Breeding or non-breeding bird* |
|---|---|---|---|
| **A004** | **Tachybaptus ruficollis** | **Dodaars** | **B+N** |
| **A005** | **Podiceps cristatus** | **Fuut** | **N** |
| **A008** | **Podiceps nigricollis** | **Geoorde fuut** | **B+N** |
| **A017** | **Phalacrocorax carbo** | **Aalscholver** | **B+N** |
| **A039** | **Anser fabalis** | **Taigarietgans / Toendrarietgans** | **N** |
| **A040** | **Anser brachyrhynchus** | **Kleine rietgans** | **N** |
| **A041** | **Anser albifrons** | **Kolgans** | **N** |
| **A043** | **Anser anser** | **Grauwe gans** | **N** |
| **A046** | **Branta bernicla** | **Rotgans** | **N** |
| **A048** | **Tadorna tadorna** | **Bergeend** | **N** |
| **A050** | **Anas penelope** | **Smient** | **N** |
| **A051** | **Anas strepera** | **Krakeend** | **N** |
| **A052** | **Anas crecca** | **Wintertaling** | **N** |
| **A053** | **Anas platyrhynchos** | **Wilde eend** | **N** |
| **A054** | **Anas acuta** | **Pijlstaart** | **N** |
| **A056** | **Anas clypeata** | **Slobeend** | **N** |
| **A058** | **Netta rufina** | **Krooneend** | **N** |
| **A059** | **Aythya ferina** | **Tafeleend** | **N** |
| **A061** | **Aythya fuligula** | **Kuifeend** | **N** |
| **A062** | **Aythya marila** | **Toppereend** | **N** |
| **A063** | **Somateria mollissima** | **Eider** | **B+N** |
| **A065** | **Melanitta nigra** | **Zwarte zee-eend** | **N** |
| **A067** | **Bucephala clangula** | **Brilduiker** | **N** |
| **A069** | **Mergus serrator** | **Middelste zaagbek** | **N** |
| **A070** | **Mergus merganser** | **Grote zaagbek** | **N** |
| **A125** | **Fulica atra** | **Meerkoet** | **N** |
| **A130** | **Haematopus ostralegus** | **Scholekster** | **N** |
| **A137** | **Charadrius hiaticula** | **Bontbekplevier** | **B+N** |
| **A141** | **Pluvialis squatarola** | **Zilverplevier** | **N** |
| **A142** | **Vanellus vanellus** | **Kievit** | **N** |
| **A143** | **Calidris canutus** | **Kanoetstrandloper** | **N** |
| **A144** | **Calidris alba** | **Drieteenstrandloper** | **N** |
| **A147** | **Calidris ferruginea** | **Krombekstrandloper** | **N** |
| **A149** | **Calidris alpina** | **Bonte strandloper** | **N** |
| **A153** | **Gallinago gallinago** | **Watersnip** | **B** |
| **A156** | **Limosa limosa** | **Grutto** | **N** |
| **A160** | **Numenius arquata** | **Wulp** | **N** |
| **A161** | **Tringa erythropus** | **Zwarte ruiter** | **N** |
| **A162** | **Tringa totanus** | **Tureluur** | **N** |
| **A164** | **Tringa nebularia** | **Groenpootruiter** | **N** |
| **A169** | **Arenaria interpres** | **Steenloper** | **N** |
| **A183** | **Larus fuscus** | **Kleine mantelmeeuw** | **B** |
| A233 | Jynx torquilla | Draaihals | B |
| **A249** | **Riparia riparia** | **Oeverzwaluw** | **B** |
| A275 | Saxicola rubetra | Paapje | B |
| A276 | Saxicola torquata | Roodborsttapuit | B |
| A277 | Oenanthe oenanthe | Tapuit | B |
| **A292** | **Locustella luscinioides** | **Snor** | **B** |
| **A295** | **Acrocephalus** | **Rietzanger** | **B** |
| **A298** | **Acrocephalus arundinaceus** | **Grote karekiet** | **B** |

** B = Breeding bird, N = Non-breeding bird*

# Annex 4 - Overview Natura 2000 sites in the Netherlands (end 2018)

BD = Birds Directive
HD = Habitats Directive
SCI = Sites of Community Importance (HD)
SAC = Special Protection Area (HD)
SPA = Special Areas of Conservation (VR)

**Bold** = large waters

| Code | Natura 2000 site | BD / HD | SAC | SCI | SPA |
|---|---|---|---|---|---|
| **1** | **Waddenzee** | **BD+HD** | **SAC** | | **SPA** |
| 2 | Duinen en Lage Land Texel | BD+HD | SAC | | SPA |
| 3 | Duinen Vlieland | BD+HD | SAC | | SPA |
| 4 | Duinen Terschelling | BD+HD | SAC | | SPA |
| 5 | Duinen Ameland | BD+HD | SAC | | SPA |
| 6 | Duinen Schiermonnikoog | BD+HD | SAC | | SPA |
| **7** | **Noordzeekustzone** | **BD+HD** | **SAC** | | **SPA** |
| 8 | Lauwersmeer | BD | | | SPA |
| 9 | Groote Wielen | BD+HD | SAC | | SPA |
| 10 | Oudegaasterbrekken, Fleussen en omgeving | BD+HD | SAC | | SPA |
| 11 | Witte en Zwarte Brekken | BD | | | SPA |
| 12 | Sneekermeergebied | BD | | | SPA |
| 13 | Alde Feanen | BD+HD | SAC | | SPA |
| 14 | Deelen | BD | | | SPA |
| 15 | Van Oordt's Mersken | BD+HD | SAC | | SPA |
| 16 | Wijnjeterper Schar | HD | SAC | | |
| 17 | Bakkeveense Duinen | HD | SAC | | |
| 18 | Rottige Meenthe & Brandemeer | HD | SAC | | |
| 19 | Leekstermeergebied | BD | | | SPA |
| 20 | Zuidlaardermeergebied | BD | | | SPA |
| 21 | Lieftinghsbroek | HD | SAC | | |
| 22 | Norgerholt | HD | SAC | | |
| 23 | Fochteloërveen | BD+HD | SAC | | SPA |
| 24 | Witterveld | HD | SAC | | |
| 25 | Drentsche Aa-gebied | HD | SAC | | |
| 26 | Drouwenerzand | HD | SAC | | |
| 27 | Drents-Friese Wold & Leggelderveld | BD+HD | SAC | | SPA |
| 28 | Elperstroomgebied | HD | SAC | | |
| 29 | Holtingerveld | HD | SAC | | |
| 30 | Dwingelderveld | BD+HD | SAC | | SPA |
| 31 | Mantingerbos | HD | SAC | | |
| 32 | Mantingerzand | HD | SAC | | |
| 33 | Bargerveen | BD+HD | SAC | | SPA |
| 34 | Weerribben | BD+HD | SAC | | SPA |
| 35 | De Wieden | BD+HD | SAC | | SPA |
| 36 | Uiterwaarden Zwarte Water & Vecht | BD+HD | SAC | | SPA |
| 37 | Olde Maten & Veerslootlanden | HD | SAC | | |
| **38** | **Rijntakken** | **BD+HD** | **SAC** | | **SPA** |
| 39 | Vecht- en Beneden-Reggegebied | HD | SAC | | |
| 40 | Engbertsdijksvenen | BD+HD | SAC | | SPA |
| 41 | Boetelerveld | HD | SAC | | |
| 42 | Sallandse Heuvelrug | BD+HD | SAC | | SPA |
| 43 | Wierdense Veld | HD | SAC | | |
| 44 | Borkeld | HD | SAC | | |
| 45 | Springendal & Dal van de Mosbeek | HD | SAC | | |
| 46 | Bergvennen & Brecklenkampse Veld | HD | SAC | | |
| 47 | Achter de Voort, Agelerbroek & Voltherbroek | HD | SAC | | |
| 48 | Lemselermaten | HD | SAC | | |
| 49 | Dinkelland | HD | SAC | | |

| Code | Natura 2000 site | BD / HD | SAC | SCI | SPA |
|---|---|---|---|---|---|
| 50 | Landgoederen Oldenzaal | HD | SAC | | |
| 51 | Lonnekermeer | HD | SAC | | |
| 53 | Buurserzand & Haaksbergerveen | HD | SAC | | |
| 54 | Witte Veen | HD | SAC | | |
| 55 | Aamsveen | HD | SAC | | |
| 56 | Arkemheen | BD | | | SPA |
| 57 | Veluwe | BD+HD | SAC | | SPA |
| 58 | Landgoederen Brummen | HD | SAC | | |
| 60 | Stelkampsveld | HD | SAC | | |
| 61 | Korenburgerveen | HD | SAC | | |
| 62 | Willinks Weust | HD | SAC | | |
| 63 | Bekendelle | HD | SAC | | |
| 64 | Wooldse Veen | HD | SAC | | |
| 65 | Binnenveld | HD | SAC | | |
| 69 | De Bruuk | HD | SAC | | |
| 70 | Lingegebied & Diefdijk-Zuid | HD | SAC | | |
| 71 | Loevestein, Pompveld & Kornsche Boezem | HD | SAC | | |
| **72** | **IJsselmeer** | **BD+HD** | **SAC** | | **SPA** |
| **73** | **Markermeer & IJmeer** | **BD+HD** | **SAC** | | **SPA** |
| **74** | **Zwarte Meer** | **BD+HD** | **SAC** | | **SPA** |
| **75** | **Ketelmeer & Vossemeer** | **BD** | | | **SPA** |
| **76** | **Veluwerandmeren** | **BD+HD** | **SAC** | | **SPA** |
| **77** | **Eemmeer & Gooimeer Zuidoever** | **BD** | | | **SPA** |
| 78 | Oostvaardersplassen | BD | | | SPA |
| 79 | Lepelaarplassen | BD | | | SPA |
| 81 | Kolland & Overlangbroek | HD | SAC | | |
| 82 | Uiterwaarden Lek | HD | SAC | | |
| 83 | Botshol | HD | SAC | | |
| 84 | Duinen Den Helder - Callantsoog | HD | SAC | | |
| 85 | Zwanenwater & Pettemerduinen | BD+HD | SAC | | SPA |
| 86 | Schoorlse Duinen | HD | SAC | | |
| 87 | Noordhollands Duinreservaat | HD | SAC | | |
| 88 | Kennemerland-Zuid | HD | SAC | | |
| 89 | Eilandspolder | BD+HD | SAC | | SPA |
| 90 | Wormer- en Jisperveld & Kalverpolder | BD+HD | SAC | | SPA |
| 91 | Polder Westzaan | HD | SAC | | |
| 92 | Ilperveld, Oostzanerveld, Varkensland & Twiske | BD+HD | SAC | | SPA |
| 93 | Polder Zeevang | BD | | | SPA |
| 94 | Naardermeer | BD+HD | SAC | | SPA |
| 95 | Oostelijke Vechtplassen | BD+HD | SAC | | SPA |
| 96 | Coepelduynen | HD | SAC | | |
| 97 | Meijendel & Berkheide | HD | SAC | | |
| 98 | Westduinpark & Wapendal | HD | SAC | | |
| 99 | Solleveld & Kapittelduinen | HD | SAC | | |
| 100 | Voornes Duin | BD+HD | SAC | | SPA |
| 101 | Duinen Goeree & Kwade Hoek | BD+HD | SAC | | SPA |
| 102 | De Wilck | BD | | | SPA |
| 103 | Nieuwkoopse Plassen & de Haeck | BD+HD | SAC | | SPA |
| 104 | Broekvelden, Vettenbroek & Polder Stein | BD | | | SPA |
| 105 | Zouweboezem | BD+HD | SAC | | SPA |
| 106 | Boezems Kinderdijk | BD | | | SPA |
| 107 | Donkse Laagten | BD | | | SPA |
| **108** | **Oude Maas** | **HD** | **SAC** | | |
| **109** | **Haringvliet** | **BD+HD** | **SAC** | | **SPA** |
| 110 | Oudeland van Strijen | BD | | | SPA |
| **111** | **Hollands Diep** | **BD+HD** | **SAC** | | **SPA** |
| 112 | Biesbosch | BD+HD | SAC | | SPA |
| **113** | **Voordelta** | **BD+HD** | **SAC** | | **SPA** |
| **114** | **Krammer-Volkerak** | **BD+HD** | | **SCI** | **SPA** |
| **115** | **Grevelingen** | **BD+HD** | **SAC** | | **SPA** |
| 116 | Kop van Schouwen | HD | SAC | | |

| Code | Natura 2000 site | BD / HD | SAC | SCI | SPA |
|---|---|---|---|---|---|
| 117 | Manteling van Walcheren | HD | SAC | | |
| **118** | **Oosterschelde** | **BD+HD** | **SAC** | | **SPA** |
| **119** | **Veerse Meer** | **BD** | | | **SPA** |
| **120** | **Zoommeer** | **BD** | | | **SPA** |
| 121 | Yersekse en Kapelse Moer | BD+HD | SAC | | SPA |
| **122** | **Westerschelde & Saeftinghe** | **BD+HD** | **SAC** | | **SPA** |
| 123 | Zwin & Kievittepolder | BD+HD | SAC | | SPA |
| 124 | Groote Gat | HD | SAC | | |
| 125 | Canisvliet | HD | SAC | | |
| 126 | Vogelkreek | HD | SAC | | |
| 127 | Markiezaat | BD | | | SPA |
| 128 | Brabantse Wal | BD+HD | SAC | | SPA |
| 129 | Ulvenhoutse Bos | HD | SAC | | |
| 130 | Langstraat | HD | SAC | | |
| 131 | Loonse en Drunense Duinen & Leemkuilen | HD | SAC | | |
| 132 | Vlijmens Ven, Moerputten & Bossche Broek | HD | SAC | | |
| 133 | Kampina & Oisterwijkse Vennen | BD+HD | SAC | | SPA |
| 134 | Regte Heide & Riels Laag | HD | SAC | | |
| 135 | Kempenland-West | HD | SAC | | |
| 136 | Leenderbos, Groote Heide & De Plateaux | BD+HD | SAC | | SPA |
| 137 | Strabrechtse Heide & Beuven | BD+HD | SAC | | SPA |
| 138 | Weerter- en Budelerbergen & Ringselven | BD+HD | SAC | | SPA |
| 139 | Deurnsche Peel & Mariapeel | BD+HD | SAC | | SPA |
| 140 | Groote Peel | BD+HD | SAC | | SPA |
| 141 | Oeffeltermeent | HD | SAC | | |
| 142 | Sint Jansberg | HD | SAC | | |
| 143 | Zeldersche Driessen | HD | SAC | | |
| 144 | Boschhuizerbergen | HD | SAC | | |
| 145 | Maasduinen | BD+HD | SAC | | SPA |
| 146 | Sarsven en De Banen | HD | SAC | | |
| 147 | Leudal | HD | SAC | | |
| 148 | Swalmdal | HD | SAC | | |
| 149 | Meinweg | BD+HD | SAC | | SPA |
| 150 | Roerdal | HD | SAC | | |
| 151 | Abdij Lilbosch & Voormalig Klooster Mariahoop | HD | SAC | | |
| **152** | **Grensmaas** | **HD** | **SAC** | | |
| 153 | Bunder- en Elsloërbos | HD | SAC | | |
| 154 | Geleenbeekdal | HD | SAC | | |
| 155 | Brunssummerheide | HD | SAC | | |
| 156 | Bemelerberg & Schiepersberg | HD | SAC | | |
| 157 | Geuldal | HD | SAC | | |
| 158 | Kunderberg | HD | SAC | | |
| 159 | Sint Pietersberg & Jekerdal | HD | SAC | | |
| 160 | Savelsbos | HD | SAC | | |
| 161 | Noorbeemden & Hoogbos | HD | SAC | | |
| 162 | Abtskolk & De Putten | BD | | | SPA |
| **163** | **Vlakte van de Raan** | **HD** | **SAC** | | |
| **164** | **Doggersbank** | **HD** | **SAC** | | |
| **165** | **Klaverbank** | **HD** | **SAC** | | |
| **166** | **Friese Front** | **BD** | | | **SPA** |
| **167** | **Maas bij Eijsden** | **HD** | | **SCI** | |
| | | **161** | **137** | **2** | **77** |

# Annex 5 - Legal and administrative provisions for protection and management of Natura 2000 sites

## 5.1. The Relevant legal provisions

The European biodiversity strategy for 2020 is based on the Convention on Biological Diversity. As soon as the next Biodiversity strategy appears, which is soon, the Netherlands will update this PAF again.

The strategy involves the full implementation of the Birds Directive and the Habitats Directive, and the conservation and improvement of existing ecosystems. Furthermore the strategy involves ensuring farming and forestry to contribute to biodiversity, ensuring a more sustainable fishing industry, combating invasive non-native plant and animal species and ensuring a greater EU contribution to conserving biodiversity worldwide.

The Netherlands implements these international treaties by means of the Nature Network Netherlands, Natura 2000, the interdepartmental policy programme 'Biodiversity Works' (2008-2011), the Natural Capital Agenda (2013) and the Water Framework Directive. Marine biodiversity is regulated inter alia by the EU Marine Strategy Framework Directive (Source: Ministry of Economic Affairs, 2014a). In addition, the Dutch government published a policy document in 2014, the National Vision for Nature 'Natuurlijk Verder'.

**Birds Directive, Habitats Directive and Natura 2000**
On 16 December 2015, the new Nature Conservation Act[102] (*Wet Natuurbehoud* - Wnb) was adopted, laying down the agreements on decentralisation. Enforcement of this law began on 1 January 2017. The new statutory system replaces the Nature Conservation Act 1998 (2005), the Flora and Fauna Act (2005) and the Forestry Act (1961) and the implementing regulations based thereon. The Wnb is a simplification compared to the existing system, including a better connection to European law and environmental law. The Wnb includes the Dutch interpretation of the Birds Directive and the Habitat Directive; all relevant articles of the directives are included in the Wnb.

For all Natura 2000 sites the protection is laid down in the Wnb. The Act makes provision for various tools:

- The assignment of tasks to the different layers of government
- The designation of Natura 2000 sites.
- The laying down of management plans for Natura 2000 sites and the establishment of conservation measures and appropriate measures.
- A licensing requirement for actions that could harm natural assets and related species and habitats in those sites, including appropriate assessment of projects that might have significant negative consequences on those natural assets.
- The power of government bodies to issue instructions to take appropriate measures in the case of actions that could be harmful but do not require a licence.
- The possibility of restricting access to specific areas of these Natura 2000 sites.
- An obligation upon holders of land rights to permit de facto measures required to conserve or maintain natural assets and related species and habitats.
- Reporting obligations

The Nature Conservation Act (Wnb) also protects all animal and plant species of European importance (birds and species in Annexes IV and V to the Habitats Directive). To this end the Act provides for a system of bans on harmful actions, such as killing, catching and disturbing animals and destroying their primary habitat and picking plants. Dispensations from these bans can be granted subject to strict conditions and only based on a valid legal interest.

The responsibilities of the various authorities are laid down in the Wnb. In n the coalition agreement of 2010 the Dutch government intends to decentralise nature policy to the provinces. The agreements on this were initially laid down in the Administrative Agreement on Nature[103] (2011 & 2012) (*Bestuursakkoord Natuur)*. In September 2013, the twelve provinces made final agreements with the State Secretary for Economic Affairs in

[102] https://www.rijksoverheid.nl/onderwerpen/natuur-en-biodiversiteit/wetgeving-voor-natuurbescherming-in-nederland
[103] https://www.rijksoverheid.nl/onderwerpen/natuur-en-biodiversiteit/documenten/kamerstukken/2012/08/17/wetsvoorstel-natuurbescherming

the Nature Pact. For example, provinces have become responsible for the realisation of the Nature Network Netherlands (NNN) and the objectives in the Natura 2000 areas, with the exception of the national waters managed by Rijkswaterstaat, for which the Ministry of Infrastructure and Water remains responsible. From now on, the provinces will also be responsible for protection of species. Provinces and the national government will jointly draw up a system for monitoring nature. Provinces also grant the permits for the Natura 2000 sites under their responsibility. The Ministry of Agriculture, Nature and Food Quality (LNV) is responsible where it concerns national land or projects of national significance. Furthermore, the Minister of LNV remains responsible for the designation of Natura 2000 areas.

The Nature Conservation Act also sets out requirements for national reporting on nature and biodiversity and its policy, which is published once every two years by the Environmental Assessment Agency (*Planbureau voor de Leefomgeving*) in the 'Assessment of the Living Environment' ('*Balans van de Leefomgeving'*).

The Dutch provinces have published reports - and will continue to do so – on the implementation and realization of the so called Nature Pact[104]. This is a covenant and cooperation agreement between the national and provincial governments concerning the realization of the main objectives of the national nature policy. The provincial authorities are fully responsible for creating the Nature Network in association with the interest groups concerned.

On the 2nd of October 2019 the 5th report - on the realization of the Nature Pact during the year 2018- was published. https://www.bij12.nl/onderwerpen/natuur-en-landschap/voortgangsrapportages-natuur/

Other tools are also important to meet the outcome requirements under the Birds and Habitats Directives. Among others providing grants for nature conservation on agricultural land, land acquisition and development and the closure or relocation of businesses. The creation of the Nature Network Netherlands also falls into this category of tools (see also 14.3.).

Other tools are the protection of sites under spatial planning law (the Physical Planning Act) and the favourable effects of general environmental laws on flora and fauna, including the Environmental Protection Act and the Ammonia and Livestock Act, the Surface Waters Pollution Act, the Water Act, the Act on Manures and Fertilisers, the Plant Protection Products and Biocides Act, and the Soil Protection Act.

The new Environment Act is currently developed[105], with which the government wants to simplify and merge the regulations for spatial development. The transition to the Environment Act will take place in a policy-neutral manner. The proposal for the Nature Supplement Act, which will replace the Wnb, was sent to the House of Representatives in July 2018. Enforcement is scheduled for 2021.

Designation of Natura 2000 sites

For each Natura 2000 site a designation decision is drawn up setting out the conservation measures in terms of conservation and improvement, including ecological arguments. The decision also sets out the demarcation of the site, an account of how the decision was reached and an overview of how the objections lodged were treated. The Ministry of Economic Affairs bears primary responsibility for drawing up and laying down the designation decisions. The implementation of these government decisions falls within the scope of the General Administrative Law Act of 14 June 1994 (AwB), which prescribes the decision-making procedure in terms of the minimum steps required. This means that the designation decision must be published in draft form and deposited for inspection first. The objections submitted are then dealt with and the competent authority (central government) takes a final decision, against which an appeal can be lodged with the Council of State. During the run-up to the decisions provincial authorities and central government bodies are consulted.

The methodology of setting conservation objectives for Natura 2000 sites (at national level and site-specific) is explained in the 'Natura 2000 Doelendocument' (2006) of which an English summary has been prepared: 'Natura 2000 targets document. Summary. Setting conservation objectives for the Natura 2000 network in the Netherlands'. The methodology was similar for habitat types and species (Habitats Directive) and bird species to ensure a coherent approach. Targets have been set on the national level and on the site level. For species

[104] See letter for the Cabinet about nature pact https://www.rijksoverheid.nl/documenten/kamerstukken/2013/09/18/kamerbrief-natuurpact

[105] https://www.omgevingswetportaal.nl/binaries/omgevingswetportaal/documenten/kamerstukken/2019/02/01/kamerbrief-over-het-aanvullingsbesluit-natuur-en-de-aanvullingswet-natuur-omgevingswet/kamerbrief-over-het-aanvullingsbesluit-natuur-en-de-aanvullingswet-natuur-omgevingswet.pdf

and habitat types of the Habitats Directive these targets are qualitative (conserve/enhance/enlarge), for birds as much as possible quantitative goals for population are set.

The current situation regarding the designation of Natura 2000 sites in the Netherlands is shown on this page https://www.natura2000.nl/gebieden (in Dutch only).

Drafting of Natura 2000 management plans

The Habitats Directive (Article 6(1) and (2)) lays down the minimum requirement of preventing deterioration at site level and making real efforts – based on 'loyal cooperation' – towards meeting the Natura 2000 objectives. These objectives are laid down nationally in the Netherlands and then strategically allocated to the sites in a designation decision. The management plans go into greater detail in terms of space and time. The implementation of the objectives may be phased over a number of management plan periods by setting interim objectives. A management plan runs for six years. In general, the first management plan period focuses on conservation; subsequent periods focus more on restoration and development.

The package of measures in the management plans makes a substantial contribution to meeting the Natura 2000 objectives for a particular site. The aim of the package of measures in the first management plan period is mainly to prevent the deterioration of all the designated habitat types and all the habitats of designated species in the Natura 2000 sites. This period is also used to take advantage of the opportunities to enlarge the surface of protected habitats and improve their quality, where possible and required in line with the conservation objectives. This work continues in the subsequent periods.

Responsibility for drawing up the management plans is determined by how ownership is distributed (and who the largest management authority is) in the sites. If the majority of the land in the site is owned by the central government than the central government takes the lead and bears primary responsibility for drawing up the management plan. If the majority of the land is privately owned than the provincial authority takes the lead and thus bears primary responsibility for drawing up the management plan. The Nature Conservation Act 1998 requires a management plan to be drawn up for each Natura 2000 site[106]. Management plans are drawn up in close consultation with owners, users and other government bodies involved, in particular municipal authorities, water boards and provincial authorities. In most cases the provincial authority takes the initiative to draw up the management plan, in other cases central government.

The competent authority (the ministries and provincial authorities concerned) establishes the management plans. The establishment of a management plan is a government (political) decision, which is subject to the General Administrative Law Act (AwB), as are the designation decisions. Before the management plan can be established a detailed site process takes place, in which all those directly involved (management authorities, users, local residents, municipal authorities, nature conservation organizations and water boards, etc.) are consulted.

The management plan remains in force for six years. Towards the end of this period it is reviewed by the competent authority, which assesses whether the realized measures have lead to the desired results. Depending on the results of this review, the validity period of the management plan may be extended by another six years. Or a new management plan, containing new measures, may be drawn up.

The management plan sets out the natural assets and the ecological prerequisites for meeting and/or maintaining the site-specific conservation objectives. It also sets out the measures required to ensure that the objectives are met sustainably, stating at what locations and within what time limit they must be implemented, including monitoring and funding. The management plan briefly sets out what funds and grants may be used to fund the measures. It also gives an overview of the activities currently taking place in and around the Natura 2000 site and how they relate to the conservation objectives. If activities are going on that have a negative effect on meeting the conservation objectives, the plan sets out measures to minimize these effects. In the case of future activities that could have a negative effect on meeting the site-specific conservation objectives the licensing procedure under the Nature Conservation Act 1998 must be followed. The management plan provides a framework for nature policy in the Natura 2000 site and thus lays down the criteria for whether the Act has been correctly applied.

**Overview of leaders & number of sites**

Each Natura 2000 site has a leader in drawing up the management plan.

*Table 0-1*

[106] https://www.natura2000.nl/procedure/beheerplannen-voor-natura-2000-gebieden

| Leader | Number of sites |
|---|---|
| Economic Affairs | 40 |
| Infrastructure & Environment (Directorate-General for Public Works and Water Management) | 24 |
| Defence | 9 |
| Province | 97 |

The leader is the point of contact and bears responsibility for the process as a whole.

The Dutch ownership of the Natura 2000 sites in the Large waters is divided over 4 different leaders. One of the bottlenecks for implementing Natura 2000 in the Netherlands is the current governance situation in which a set of (financial) agreements on implementing Natura 2000 in the Large Waters is not available[107].

**Progress on drafting of management plans[108]**

Water and Nature[109]

Water plays a vital role in many of the Natura 2000 management plans. It became clear when drawing up these plans that achieving the required water conditions is a difficult task, of the same order as the nitrogen problem. There is broad consensus as to the urgency of the task, and the priority actions focus upon it.

The aim is to achieve an integrated water task for Natura 2000 sites and their surrounding areas

- that is compatible with the overall package of measures for meeting the Natura 2000, Nature Network Netherlands and Water Framework Directive objectives
- through clear-cut administrative leadership, choices and dynamic cooperation between authorities
- through an integrated site process with the aim of combining sector-specific projects.

*Dutch large waters[110]*

A total of 24 sites in the Dutch large waters have been designated by the Ministry of Economic Affairs (or Economic Affairs, Agriculture and Innovation or Agriculture, Nature and Food Quality) under the EU Birds and/or Habitats Directive.

The Natura 2000 conservation objectives for the national waters are based on the designation decisions/draft decisions. The Natura 2000 management plans go into detail as to how the objectives must eventually be met. Many of the objectives and tasks are related to Clean and Healthy Water themes: regarding habitat (restoration of habitats, peace and space, and food availability) and connections between upstream and downstream waterbodies (improving fish migration). The main nature conservation tasks for each water system are as follows:

- IJsselmeer region: improving and securing current food availability for waterfowl, maintaining and improving reed and marsh habitats, and gradual land-water transitions in the riparian zones.
- Wadden Sea, North Sea and coast: maintaining and improving permanently flooded sand flats, mud and sand flats and salt marsh habitats that dry out during low tide, embryonic wandering dunes and pioneer vegetation in mud and sand flat areas.
- Rivers: maintaining and improving ecological connections and gradients along and across river flows.
- South-Western Delta: maintaining and improving a large-scale estuarine system with the fullest possible freshwater-saltwater and still-tidal gradients.

For detailed information see https://www.rijkswaterstaat.nl/water/waterbeheer/beheer-en-ontwikkeling-rijkswateren/beheer-ontwikkelplan-rijkswateren.aspx .

Nitrogen approach[111]

In the Netherlands, the deposition of atmospheric nitrogen compounds is in many places higher than the critical deposition value of habitats present. This is harmful to nature, but also hampers the granting of permits for economic activities. For this reason, the Netherlands developed a Nitrogen Approach Programme

[107] Rapport - **Beleidsdoorlichting Natuur en regio** Doeltreffendheid en doelmatigheid van beleid dat valt onder artikel 18 van de Rijksbegroting Ministerie van Economische Zaken, november 2015, p 71/72

[108] https://www.bij12.nl/onderwerpen/natuur-en-landschap/natura-2000-beheerplannen/

[109] https://www.rwsnatura2000.nl/Gebieden/default.aspx

[110] http://rwsnatura2000.nl/Gebieden/default.aspx

[111] https://www.rijksoverheid.nl/onderwerpen/aanpak-stikstof

(*Programma Aanpak Stikstof* - PAS) in 2015. The programme includes source directed measures to reduce nitrogen emissions and recovery measures to improve nature's resistance to nitrogen overload. National recovery strategies have been drawn up: documents identifying the most effective recovery measures per habitat and habitat type to mitigate the effects of nitrogen deposition. The recovery measures, the decline in nitrogen deposition due to existing policies and additional source directed measures create space for new economic activities. The PAS includes all Natura 2000 sites where at least one nitrogen sensitive habitat is affected by nitrogen overload. This is the case for 118 of the 161 Natura 2000 sites.

In May 2017, the Conseil d'État submitted so-called preliminary questions on the PAS to the Court of Justice in Luxembourg. The Court rendered its judgment on 7 November 2018. The European Court of Justice accepts a system such as the PAS when authorising projects. However, the Administrative Jurisdiction Division of the Council of State ruled on 29 May 2019 that granting permission for activities that are potentially harmful to Natura 2000 areas in anticipation of future positive effects of restoration measures is not permitted.

Because nitrogen continues to be a major problem for Dutch nature, work on the approach of nitrogen issues will continue in the coming Multiannual Financial Framework (MFF) period. Recovery measures, source directed measures and research into both remain relevant. A calculation method will also remain useful. Therefore, costs for these measures in the former PAF are included in the coming period.

Inter-administrative programme directorate Nitrogen in formation (IPS) 2019[112]
Finding solutions to the nitrogen issue is not only the responsibility of the Ministry of Agriculture, Nature and Food Quality, but of the entire cabinet. This Directorate General that is established is working on the government-wide approach to further reduce the total amount of nitrogen deposition in the Netherlands and thus to restore and strengthen nature.

In its letter on nitrogen measures of 13 November 2019,[113] the Government also addressed their perspective on nature.

**National Water Plan 1, 2 & 3**
The basic idea for sustainable water management in the National Water Plan (NWP) 2009-2015 (NWP)[114] is 'going along with national processes where possible, resisting where necessary, and taking advantage of opportunities for prosperity and well-being'. The NWP also sets out policy on developing a sustainable, climate-proof water system in the context of spatial and economic development. This has been developed inter alia in measures already implemented, such as the Oester Dam Sand Replenishment Scheme and the Sand Motor.

The National Water Plan 2016-2021 (NWP2)[115] makes clear that water policy requires an integrated approach, in terms of both organization and substance, to develop nature and other interests in conjunction with water tasks. It makes sense to combine tasks relating to water safety, freshwater supply, energy, fishing and nature conservation.

The basic idea for sustainable water management in the National Water Program (NWP) 2022-2027 is the integration of national water policy and national water management in one Program. And integrated approach on water policy and water management on flood risk, freshwater availability and ecological water quality and other environmental policies and management, in particular shipping, nature, soil, circular agriculture and energy transition, including clear descriptions of the responsibilities.

**Water Framework Directive**
The aim of the EU Water Framework Directive (WFD) is to bring water quality in the European Union member states into line. The Directive has been implemented nationally in the Water Act and the Environmental Protection Act. The WFD applies to all water bodies: rivers, lakes, coastal waters and groundwater. It requires the chemical and ecological conditions for groundwater and surface water bodies in general and the water conditions for specific areas requiring protection (including Natura 2000 sites) to be brought into line by 2027

[112] https://www.rijksoverheid.nl/documenten/kamerstukken/2019/11/13/maatregelenpakket-voor-de-stikstofproblematiek-in-de-woningbouw--en-infrastructuursector-en-voor-de-pfas-problematiek
[113] Letter on nitrogen measures of 13 November 2019 from the Cabinet https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/kamerstukken/2019/11/13/maatregelenpakket-voor-de-stikstofproblematiek-in-de-woningbouw--en-infrastructuursector-en-voor-de-pfas-problematiek/kamerbrief+Stikstof+13+november.pdf
[114] https://www.rijksoverheid.nl/documenten/rapporten/2009/12/01/nationaal-waterplan-2009-2015
[115] https://www.rijksoverheid.nl/documenten/beleidsnota-s/2015/12/14/nationaal-waterplan-2016-2021

at the latest. To this end each member state must set up a management system for each river basin (River Basin Management Plans), taking into account the cross-border nature of many water systems. Measures taken by neighbouring countries could affect the risk of flooding in the Netherlands, hence the EU Flood Risks Directive (FRD) and WFD require policies to be coordinated internationally. This takes place at two levels: in the case of the main courses of the large rivers, the Rhine, Meuse, Scheldt and Ems, cross-border objectives and measures are agreed on in the International River Commissions. In addition, bilateral consultations take place on the smaller cross-border water bodies in the river basin. The Minister of Infrastructure and the Environment bears ultimate responsibility for the implementation of the WFD, also on behalf of the other central government bodies and in close consultation with the provincial authorities, water boards and municipal authorities. The Water Covenant sets out how these bodies are to cooperate with one another in water management and policy.

The first River Basin Management Plans (for implementation in the 2010-2015 period) mainly set out development measures for surface water bodies and overall policy on the quality and quantity of groundwater and surface water bodies. The second and third generation River Basin Management Plans (for 2015-2021 and 2021-2027) set out additional measures that need to be taken.

The WFD focuses on achieving Good Ecological Condition (GEC) for natural surface water bodies (of which the Netherlands has only a limited number) and Good Ecological Potential (GEP) for artificial surface water bodies or those that are subject to substantial change. The Desired Groundwater and Surface Water Regime (GGOR in Dutch) is one of the tools being used to decide on water management policy to meet these objectives at site level. The provincial authorities have laid down the framework for these GGORs. The water boards establish the GGORs, which are then approved by the provincial authorities.

Coordination between WFD and Natura 2000

The aim of both the WFD and the Birds and Habitats Directives is sustainable, ecologically healthy ecosystems. The WFD objectives in Natura 2000 sites should be met by 2015, except when exemptions have been applied. In many large waters the objectives have been phased for some parameters, so these will be met in 2021 or 2027. Water quality standards – in addition to the WFD objectives – required to meet the Natura 2000 conservation objectives must be included in the WFD River Basin Management Plan, along with the measures and time limits for their implementation. There is no final time limit for Natura 2000 and the Birds and Habitats Directives. The WFD is based on the objectives being met by 2015, with an extension to 2021 or 2027 if necessary. If the value of a Natura 2000 site is in danger of deteriorating, measures to improve quality may need to be taken sooner. These sites are designated as having a 'sense of urgency'.

During the 2006-2009 period a start was made on achieving maximum synergy between WFD and Natura 2000 measures. The water measures agreed by the authorities under the Natura 2000 management plans until 28 October 2015 were included in some River Basin Management Plans 2016-2021. Water measures for Natura 2000 sites agreed by the authorities later on are being included in the River Basin Management Plans 2022-2027. This approach is laid down in the WFD work programme 2015 and was adopted by a national Water Steering Group in December 2014.

**Marine Strategy Framework Directive**

The Marine Strategy Framework Directive (MSFD) requires the member states to lay down a strategy for the protection, conservation and restoration of the marine environment. This Directive has been implemented nationally in the Water Act. In the case of the Netherlands it applies to the North Sea, where the aim is to achieve a good environmental situation, while at the same time guaranteeing its sustainable use. The WFD and MSFD are closely interrelated. Many harmful effects in the North Sea can only be tackled effectively and efficiently by measures upstream. The agreed WFD measures must be implemented to achieve good environmental conditions in the North Sea.

The MSFD is complementary to the Birds and Habitats Directives (and consequently, to Natura 2000 as well). The MSFD protects the marine ecosystem and biodiversity as a whole, where both other Nature Directives focus on specific components of the ecosystem.

The National Vision for Nature proposes an approach focusing on more natural systems and improving water quality, in line with the Water Framework Directive and the Marine Strategy Framework Directive (Source: Ministry of Economic Affairs, 2014b).

## 5.2. Progress and perspectives for management planning for the sites

**Actualisation of Natura 2000 2019 target system**

Biodiversity in the Netherlands is under pressure. To conserve and restore biodiversity in the Netherlands, we work with policies laid down in the 'Natura 2000 target system' (*Doelensysteem)*. This system defines where Natura 2000 sites are located and which habitat types and species are protected. In January 2019, the Minister of LNV started updating this target system, which dates from 2006. The first phase resulted in an advice report for the update[116].

Nature, why important?

In a densely populated country like the Netherlands it is important to have and preserve valuable nature. Biodiversity is important for our well-being. Nature provides healthy soils, clean water, clean air, pollinators for food crops, natural resistance to diseases and pests and resilience to climate change. In short, nature is the basis of our existence and our economy.

On the other hand, in our densely populated country the pressure on nature is high, there are many interests on a limited area. As a result, biodiversity is under pressure; in many nature areas biodiversity is not at the desired level.

The nitrogen problem makes it clear that when nature is not in good shape, there is also little room for other (economic) developments. This leads to questions about how we deal with nature in the Netherlands. For example, on the protection of small nature areas and the number of areas and targets covered by Natura 2000 protection.

Climate change is another challenge. This results in some species to disappear and others to appear.

**Natura 2000**

With Natura 2000 (N2000), the Netherlands is implementing the area-specific elements of the Birds and Habitats Directive. The aim is to maintain and, where necessary, restore protected species and habitat types nationwide to a 'favourable conservation status'. Therefore we must ensure that the unique nature of the Netherlands in the N2000 areas does not further deteriorate, but is expanded and improved where necessary (and possible).

Nature doesn't stop at the border. The Dutch N2000 areas are therefore part of the European Natura 2000 network that was established to halt the decline of biodiversity in Europe. Each Member State has its own characteristic ecosystems, species and landscapes that are important to protect. N2000 aims to preserve and restore this diversity in European nature.

**Actualisation of the N2000 target system (*Doelensysteem*)**

The Dutch N2000 target system comprises the national policy laid down in the Natura 2000 Target Document (*Natura 2000 Doelendocument*[117])of 2006 and its translation into designation decisions and site management plans (see also the Natura2000.nl website). This policy indicates where the N2000 areas are located and what the objectives are for the protection of habitat types and species, for example for raised bogs or grey dunes.

This system has been evaluated in the recent period on the basis of the results of the European Fitness Check (2015/2016) and the experience with the operation of the system in recent years. This shows that there are wishes and possibilities to improve the N2000 target system. Therefore an update was commissioned, the first phase of which started at the beginning of 2019.

This update aims to make the implementation of the Birds and Habitats Directives more effective and efficient, with a focus on the following:

- Achieve goals more efficiently,
- Simplify procedures, and
- Improve synergy with other policy challenges .

[116] see https://www.rijksoverheid.nl/documenten/rapporten/2020/04/17/bijlage-adviesrapport-actualisatie-doelensysteem

[117] https://www.natura2000.nl/sites/default/files/Bibliotheek/Doelen/Natura%202000%20doelendocument%20%28LNV%2C%202006%29.pdf

The final report describes on which topics improvement of the system is desired and possible[118]. This concludes the first phase of the update. The topics mentioned in the report are further developed in the following phases and translated into the targets on national and area targets. Ultimately these are implemented through designation decisions and management plans.

The following actions are planned for 2020:

1) Develop a strategic plan aimed at achieving the favourable state of conservation more quickly and effectively. This is necessary to halt the decline in biodiversity. Many of the economic obstacles around N2000 result from the current poor state of nature. Achieving the favourable state of conservation will eventually provide space for other (economic) developments. The plan also elaborates on the synergy with other policies (e.g. Nature Network Netherlands, water and climate policy) so that different policy objectives can reinforce each other. The strategic plan is based on a quick scan of opportunities and bottlenecks at the national and regional level (fitness check for the Dutch Natura 2000 areas).
2) Develop tools that will provide better opportunities for the authorities involved at area level to achieve challenging targets.
3) Set up a process to be able to deal with the goals more flexibly, within the legal possibilities. This will make it possible to locate the 'expansion and improvement targets' through exchange between areas in such a way that the favourable conservation status of the countryside can be achieved more efficiently. Methods are being developed for a substantiated adaptation of goals. These can also provide a basis for continuing discussions with the European Commission.
4) Conduct research into proposals that can solve bottlenecks in the current system. The feasibility and legal sustainability of these proposals will be assessed.

Social organisations will be involved in further elaboration of these actions.

## 5.3. Relevant government and non-governmental plans

A number of administrative agreements have been entered into relating to the responsibilities, funding and implementation of Natura 2000 measures excluding the national waters. These are the Decentralization Agreement and the Nature Pact (see above); the coalition agreement; the agreement on general measures in livestock farming (with the Dutch Organization for Agriculture and Horticulture) and the deployment of resources for the implementation of the PAS (integrated approach to nitrogen). The aspirations for Dutch nature policy are also set out in the National Nature Vision 2014 Natuurlijk verder. The Nature Pact does not provide for the funding and implementation of measures for those Natura 2000 sites where the Ministry of Defence and the Directorate-General for Public Works and Water Management take the lead.

These agreements, vision and aspirations are an attempt for the time being to lay a foundation for the implementation of the measures to meet the Natura 2000 objectives. Funds are available under the Administrative Agreement on Nature (€170 million) and the coalition agreement (€200 million) to comply in principle with the conservation and prevention of deterioration of species and habitats in the Natura 2000 sites.

The organizations aim to achieve a minimum of 80,000 hectares of new natural areas, improve biodiversity and meet international nature objectives by 2027. The limitations in the scope for economic development due to nitrogen emissions are to be removed, thus creating 40,000 new jobs. The land acquired by central government for nature reserves is to be handed over to the provincial authorities. In total €800 million is available up to and including 2017, followed by €200 million a year thereafter. This decentralization has advantages and disadvantages. An advantage is that it will increase ownership of the Natura 2000 objectives; a challenge is the more intensive nature of governance due to greater fragmentation in governance and responsibilities.

The deployment of these resources will not enable all the aspirations to be achieved, however, especially not those in the longer term. To be certain of achieving favourable conservation status in the longer term, additional resources will be needed – also from European funds – not only for the Natura 2000 sites but also for the sites outside Natura 2000 and outside the Nature Network Netherlands (NNN) that contribute to

[118] https://www.rijksoverheid.nl/documenten/rapporten/2020/04/17/bijlage-adviesrapport-actualisatie-doelensysteem

meeting the Natura 2000 objectives. On top of this, the funds already allocated do not include making nature more robust and more dynamic and speeding up the entire process.

The Interdepartmental Policy Review (IBO) has identified three main problems that stand in the way of achieving the objectives[119]:

- the implementation of the objectives is based too much on species and not enough on the dynamics of nature;
- given this, among other things, the design of the Ecological Main Structure (EMS) is not ideal;
- there are problems with the practical implementation of policy that result in loss of public support.

The IBO notes that the funds available are inadequate to achieve the operational biodiversity target (EMS/Natura 2000) set for 2018, in both the short term (up to and including 2018) and the long term. The shortfall for the EMS (including Natura 2000) up to and including 2018 amounts to around 2.5 billion euros. After 2018 there remain investments in environmental conditions, the cost of which is estimated at around 1.8 billion euros; the restoration of the last 25% in particular is very expensive. After 2018 there will moreover be a structural management shortfall of over 103 million euros a year.

**Nature Network Netherlands**

The BHD are not the only instrument applied for the conservation of biodiversity: the establishment of the Nature Network Netherlands (NNN) and agro environmental measures are also very important.

The Nature Network Netherlands (formerly known as Ecological Main Structure) is the national long-term project for the conservation of biodiversity. This project focuses on interconnecting nature reserves, thereby increasing the living base for species and promoting exchange between populations. The Natura 2000 sites are connected in the NNN. The NNN consists also of nature sites that are not Natura 2000, ecological corridors and sites that still have to be developed into nature. Since 2011 more than 38.743ha new natural habitats have been developed[120], mainly on former agricultural lands, to connect the already existing nature areas ('green infrastructure'). The sites within the NNN are all protected by planning and management is aimed to obtain optimal quality of nature. In, but also outside, this network landscape features are managed for ecological coherence (Source: NL Questionnaire, 2015).

Since 2014 the provincial authorities have been responsible for the Nature Network Netherlands excluding the national waters. Provincial authorities provide grant aid for the development and management of this Network under the Landscape Management Subsidy Scheme (SNL). Through this the agricultural sector also contributes in the NNN to ecological connections and hence to coherence.

**Agro environmental measures: protection of species outside the NNN**

Also specific habitat for species in agricultural areas is conserved, mostly outside the NNN. This aims among others at the so called 'meadow birds' such as Limosa limosa. The Netherlands is very important for meadow birds: migrating birds that bring up their young on relatively wet and extensively used grasslands in open areas. Natura 2000 and the Birds Directive have relatively little significance for these birds. The most important sites for these species are located primarily outside the Natura 2000 network and even outside the NNN. Specific meadow bird sites have been designated.

However some serious bottlenecks occur. There is a decline of certain species outside the NNN, for example birds of meadows and fields (Vogelbalans 2014). One of the causes is the intensive land use by agriculture. In 2013, it was concluded in a report of the Raad voor de Leefomgeving en Infrastructuur (RLI) that the national programme for nature management on farmland (agro-environmental measures) had not been sufficiently effective. Following that report, a decision was made to reform that programme and to focus it on the development and protection of habitats of BHD species that occur on agricultural lands. This programme is now being launched in 2015. In the new programme for nature management, farm land will be integrated in the Dutch 2015-2021 RDP. In this respect, the EU policy for Rural Development has contributed to and been integrated in BHD implementation in the Netherlands. (Source: NL Questionnaire, 2015).

**National Climate Agreement**

The Netherlands' government has adopted the "*Klimaatakkoord*" (National Climate Agreement) in June 2019[121]. The budget for the actions planned as part of the agreement includes two allocations that are directly

[119] https://www.parlementairemonitor.nl/9353000/1/j9vvij5epmj1ey0/vi9i8rhf26zr

[120] *Voortgangsreportage Natuur, stand van zaken eind 2018 en ontwikkelingen in 2019* https://www.rijksoverheid.nl/documenten/rapporten/2019/10/02/vijfde-voortgangsrapportage-natuur

[121] https://www.klimaatakkoord.nl/actueel/nieuws/2019/06/28/klimaatakkoord-in-stukken

related to nature conservation and biodiversity. This concerns the budget allocations to 'Peatland meadows' and 'Extensification of dairy farming near Natura 2000 areas' (national government, budget 200 M€ in total for these 2 budget allocations).

The actions related to 'peatland meadows' are aimed at preventing further desiccation of peatland, which causes methane emissions. The 'Extensification of dairy farming Natura 2000 areas' aims to reduce pressure on Natura 2000 areas caused by nitrogen deposits of dairy farms. At a more general level, the *Klimaatakkoord* includes the principle that enhancing biodiversity is integrated in the aims of climate funding.

**Program Delta Nature**[122]
The identity of Dutch nature and landscape is characterised by the delta of the Rhine, Meuse and Scheldt with the North Sea. *Staatsbosbeheer* (State Forestry) manages part of the nature reserves along the large waters.

As a result of climate change, many developments will impact natural values in the coming decades. That is why *Staatsbosbeheer* - in cooperation with Rijkswaterstaat, provinces and others - is contributing to increasing biodiversity and meeting the government's ambitions in a sustainable manner. Recent research shows that several endangered and protected animal species are returning to the Dutch river area. Reducing the risk of flooding and starting to restore biodiversity can go alongside. See also: file Riviernatuur (dossier Riviernatuur).

**Working together on National Water Programme 2022-2027**
In the Netherlands we have to deal with water in all sorts of ways, therefore water policy is necessary. Every six years a National Water Plan (*Nationaal Water Programma* - NWP) and a Management and Development Plan for National Waters (*Beheer- en Ontwikkelplan voor de Rijkswateren* - BPRW) are published. This time both plans will be brought together in one National Water Programme 2022-2027 (NWP). The responsible ministries of Infrastructure and Water Management, Agriculture, Nature and Food Quality, and Interior and Kingdom Relations jointly determine this NWP. This makes it the first program in the spirit of the Environment Act.

To be able to meet various current and future challenges, the NWP formulates policy and management for themes such as drought, storms and heavy rainfall, the water quality and safety (including cyber security), climate adaptation, nature and biodiversity, (cycle) agriculture, shipping and energy transition. Employees of the ministries of Infrastructure and Water Management, Agriculture, Nature and Food Quality, and Interior and Kingdom Relations, Rijkswaterstaat (national water management), Union of Water Authorities (*Unie van Waterschappen* - UvW), Inter Provincial Consult (*Inter Provinciaal Overleg* - IPO), Association of Dutch Municipalities (*Vereniging Nederlandse Gemeenten* - VnG), and the Association of Dutch Water Companies (*Vereniging van drinkwaterbedrijven in Nederland* - VEWIN) are jointly developing this integral programme.

Example project for participation
Anyone who wishes can submit their view and feedback on the NWP. Until 28 November 2019 feedback on the Participation Plan and the Memorandum on Scope and Level of Detail (the action plan on the environmental impact assessment (*Milieu Effecten Rapport* - EIA) to be drawn up). From 22 December 2020 the draft NWP and EIA action plan will be available for evaluation for a duration of 6 months. Read more about this on the participation plan website.

However, the cooperating ministries go a step further: from the very beginning they involve citizens, interest groups and other stakeholders in the development of the programme through thematic and area sessions. This makes the NWP an example project for participation. This way of working is also in line with the Environment Act (*omgevingswet*). The NWP will be adopted by 22 December 2021 at the latest.

**Vision Ministry of Agriculture, Nature and Food Quality 2019**[123]
Climate change and resource scarcity require us to reassess production methods. Carola Schouten, Minister of Agriculture, Nature and Food Quality, sees circular agriculture as the logical and conclusive answer to these issues. This means closing cycles of minerals and other resources as far as possible, strengthening our focus on biodiversity and respecting the Earth's natural limits, preventing waste and ensuring farmers are paid a fair price for their hard work.

The Minister hopes that the Netherland's vision on circular agriculture will become a source of inspiration at European level.

[122] https://www.staatsbosbeheer.nl/Over-Staatsbosbeheer/Organisatie/programma
[123] https://www.government.nl/ministries/ministry-of-agriculture-nature-and-food-quality/vision-anf

Instead of constantly reducing the cost of products, we need to focus on reducing the use of raw materials. An agricultural model focused on circular principles will bring about an ecologically and economically vital prevalent production method, in balance with nature and appreciated by society.

Healthy soil is of crucial importance for future farming and forms the basis for circular farming. Applying processed animal manure maintains soil health and puts an end to the use of fertilizer based on scarce fossil raw materials. Agriculture holds an important key to further improvement of natural values and biodiversity. Nature is of value to us all, and to agriculture in particular; nature and agriculture are not opposites. The circular approach is crucial to a better connection between nature and agriculture, and will further reduce greenhouse gas emissions. After all, in nature itself, everything is part of a circular process.

**Delta Programme**
The Delta Programme aims at an integrated approach, which will provide opportunities for nature, including solutions to water and nature conservation problems. Water management authorities are thus actively looking around for ways of linking other interests with the water safety measures being developed as part of the High Water Protection Programme[124] (Delta Programme).

**Programmatic Approach Large Waters (PAGW)**
The Ministry of Infrastructure and the Environment and the Ministry of Agriculture, Nature and Food Quality (LNV) are cooperating with regional authorities and social organisations (hereafter: the region) on future-proof large waters in which high-quality nature is combined with a powerful economy (Programmatic Approach for Large Waters; PAGW). With the PAGW the ecological water quality is improved and previously lost and missing habitats are restored. In doing so, a sTable and coherent ecological network of large waters is created. Resilience of the Natura 2000 areas and other nature areas in the large waters is enhanced so that they can better absorb external environmental pressures, such as nitrogen deposition. In this way the deterioration of water quality and nature is prevented, which is mandatory under the Birds and Habitats Directives (Natura 2000) and the Water Framework Directive. By improving the quality of the living environment, the business climate also improves. If nature and the ecological water quality are in order, the societal challenges from the regional agendas can be better adjusted. E.g. in relation to urbanisation, transport and energy generation.

Based on the ecological urgency of the measures, support in the region, co-financing, possible implementation risks and opportunities for broadening the measures (so that they contribute to broader societal goals), a selection of measures is made in which will be invested. Financial reservations for these measures is required for the second tranche PAGW up to and including 2032.

Administrative consultations Multi-annual plan Infrastructure, Area and Transport (MIRT) 2019
Three measures were the subject of a MIRT (*Meerjarenplan Infrastructuur, Ruimte en Transport*) decision at the end of 2019.

1. For *Oostvaardersoevers* the Starting Decision is taken;
2. For *Wieringerhoek* the Start decision is taken;
3. For *Getij Grevelingen*, the Preferred Decision is taken subject to balanced financing by all participating parties.

For four other projects the exploration or development of the plan started in 2019. With adequate funding from central and regional governments, the intention was expressed in the MIRT Administrative Consultations on 20 and 21 November 2019 to use the reserved budget to achieve the PAGW objectives in the following projects:

1. 'Dike relocation *Paddenpol*'
2. 'Meandering *Maas*'
3. Dike reinforcement *Lauwersmeer-Vierhuizergat*'
4. *Koehool-Lauwersmeer* (soften edges of the mudflats)

Continuation
At the end of 2020 the Chamber is informed on additional investment choises for the purpose of the MIRT decision-making. Future-proof large waters in which high-quality nature goes hand in hand with a powerful economy is to be achieved through implementing all 33 measures identified in the Exploratory Study on Large Waters[125] (2017) by 2050. By 2024 at the latest and every 6 years thereafter, the PAGW and the 33 measures from the Exploratory Study on Large Waters (ex-ante) will be evaluated in terms of the targets and the

[124] https://www.rijksoverheid.nl/documenten/rapporten/2014/12/12/bijlage-1-nationaal-waterplan-2016-2021
[125] https://www.tweedekamer.nl/kamerstukken/brieven_regering/detail?id=2019Z21645id=2019D45001

effectiveness of the realised measures. The investments in the second tranche to realise a part of themeasures. Discussions on joint budgets and appropriate programming for the implementation of the remaining measures will continue with the regions.

**LIFE-IP Delta Nature 2016-2022**[126]

The Dutch large water areas have great natural value. They are a habitat for a diversity of migrating birds, fish, seals and other species. Preservation of these areas and the biodiversity is very important.

But there are also other activities and functions in these areas such as flood protection, agricultural activities and recreational activities. These different sectoral interests often hamper maintenance and restoration of biodiversity in the large water areas.

As a result, fragmentation and a complex governance structure occurs in the Dutch delta nature, leading to missed opportunities to achieve nature related objectives in conjunction with economic, water management and flood protection related objectives.

LIFE IP Delta Nature aims to develop and implement an integrated governance approach that improves coordination of these interests. This includes combining nature conservation with other activities and functions, such as flood protection and economy, thereby removing important obstacles for the achievement of Natura 2000 improvement and restoration objectives. We do this by developing and testing instruments that contribute to an integrated governance approach. One that guarantees the optimal coordination of interests in Dutch Natura 2000 areas.

In 2022 there will be two deliverables from LIFE IP Delta Nature that will make an effective contribution to nature development in the Netherlands[127]:

A. The Integrated Governance approach N2000
B. Benefits for Nature Plan in the main water systems

**Delta Programme**[128]

In 2018 the Netherlands faced extreme weather conditions: prolonged drought, heat and heavy downpours. In the summer of 2019, the national heat record of 1944 was broken. At the same time, research showed that the sea level may rise quicker than the delta scenarios assumed. And the World Economic Forum found that climate change is the biggest threat to the global economy. It is therefore very important that the Netherlands continues to prepare itself for the consequences of climate change. With excellent flood protection, sufficient fresh water and a climate-proof and water-robust designs.

This tenth Delta Programme shows that the delta decisions and preferred strategies of the Delta Programme 2015 still describe the right trajectory. However, the start of the six-yearly recalibration - which will be completed in 2021 - shows that some adjustments are needed. In order to stay on the right track, it is also crucial to continue working on the delta and to vigorously implement the measures set out in the Delta Plans for Water Safety, Freshwater and Spatial Adaptation. New insights into a possible accelerated sea level rise increase uncertainties about measures to be taken after 2050. This requires research into what is needed in the short term, in order to keep options open for the longer term. In order to gain a better insight into the pace of sea level rise after 2050, the Knowledge Programme on Sea Level Rise (*Kennisprogramma Zeespiegelstijging)* will be launched.

**Delta Plan Biodiversity Recovery**

The Netherlands' terrestrial N2000 sites are pre-dominantly relatively small areas that are heavily influenced by activity in adjacent areas. Biodiversity is still in decline, particularly because of threats related to the management of surrounding areas such as emissions of nitrogen, hydrological interventions, and despite many actions of groups of farmers and active nature conservation programmes. Consequently, reaching biodiversity targets in the Netherlands critically depends on the integration of management within and around N2000 sites. In addition to sound management of the N2000 sites, considerable adaptations in the management of surrounding areas (e.g. hydrological changes, reductions of use of agrochemicals and nitrogen emissions) are required, which in turn requires close cooperation with users of these areas (pre-dominantly agricultural sector). Therefore, a non-governmental cooperation between a broad societal coalition of nature, farming, science and business organisations has been initiated in 2018 to restore biodiversity in the Netherlands ('Delta Plan Biodiversity Recovery'). One of the actions in this plan is to develop an integrated approach for

126 https://life-ip-deltanatuur.nl/cms/view/58796946/missie-visie
127 https://life-ip-deltanatuur.nl/cms/view/58797179/english
128 https://www.deltacommissaris.nl/deltaprogramma/deltaprogramma-2020

cooperation between managers of N2000 areas, and the users of surrounding areas such as the agricultural sector, public bodies responsible for infrastructure and other relevant land users. The integrated approach is based on the recognition that nature conservation must be based on the creation of mutual benefits and new business models. Other actions focus on improving overall ecosystem health by creating favourable circumstances for targeted indicator species such as soil communities and invertebrates.

At the current moment (December 2019) this programme is developing a LIFE IP Full Proposal called All4Biodiversity[129].

**The Social Implementation Agenda for Nature Visions**

At the heart of the vision for nature is a change in mentality, from protecting nature against society to strengthening it with society. By replacing the separation and isolation of nature with intertwining and mutual reinforcement the government aims to effectively meet nature conservation targets that the Netherlands has agreed internationally. The course that the government aims to take is a robust one that can not only tolerate the influence of society but flourish with it. This will mean paying more attention to natural systems and the landscape scale so that less focus is required on preserving particular species, habitat types and sites where they have previously been found. It will also mean more investing more efforts in 'nature combinations' (joint schemes) with agriculture, country estates, recreation, water extraction, waterways, water safety, towns and cities, industrial estates and so on, thus creating better opportunities for a strong ecosystem and more relaxed coexistence with social and economic development. The involvement of the public, companies and private-sector organisations will not only benefit nature reserves that enjoy public appreciation but especially biodiversity and the associated national and international objectives. The central proposition in the vision for nature is that nature and the economy can benefit from each other. The Social Implementation Agenda for Nature Visions, which is currently being compiled, includes taking advantage of opportunities to link up with society.

**National Strategy on Spatial Planning and Environment (NOVI)[130]**

The National Strategy on Spatial Planning and the Environment (*Nationale Omgevingsvisie* - NOVI) provides a sustainable perspective for our living environment (which comprises both the built and the natural environment). This strategy document will enable us to respond to the major challenges facing us. Our environment is influenced by a whole raft of trends and developments; changing and growing cities, the transition to a sustainable and circular economy and adaptation to the consequences of climate change are all part of the bigger picture. Although these could offer opportunities, they do call for careful choices. After all, the space available to us both above the ground and below the surface is a scarce commodity. Combining all those challenges calls for a new approach, not imposed from above, but drawn up in careful consultation between government authorities, businesses, centres of knowledge, civil society organisations and individual citizens. The NOVI offers a framework, suggests a route to be followed and, wherever possible, makes choices. At the same time, it offers space for tailor-made regional solutions and area-specific elaborations. Because the responsibility for environmental policy to a large extent lies with provinces, municipalities and water authorities, in many cases, substantive choices can best be taken at a regional level. By drawing up the NOVI, we aim to initiate a process according to which we are able to accelerate and improve the way in which choices are made in respect of our living environment. In that way, we will work together to building a more attractive and stronger Netherlands.

The NOVI is part of the Environment and Planning Act (Omgevingswet), which is expected to enter into force in 2021. The underlying principle for this new approach is that interventions in the living environment must not take place in isolation, but in combination with other interventions. This will result in better, more integrated choices in specific areas. In the North Sea, for example, we are faced with the task of installing more wind turbines. This can only be achieved if sound agreements are reached with other users. We must also think carefully about the locations where the energy generated by wind turbines is brought ashore. The most efficient choice is to offer space at locations close to large-volume energy consumers.

[129] https://www.samenvoorbiodiversiteit.nl/
[130] https://www.denationaleomgevingsvisie.nl/default.aspx

# Annex 6 - Calculation of target values and costs of agricultural nature management

*Agricultural nature management of grasslands (in table E-16, in section E.2.4 Grasslands)*

The target value is based on the amount of grassland with agricultural nature management (ANM) in 2019, which is: 78.205 ha, see WUR-rapport for the Dutch parliament "**Stelselvernieuwing in uitvoering**" dd 2021. It is assumed that the amount in 2019 will grow with 2,5 percent per year. The basis for this assumption is the growth in previous years of (on average) 3,5%. Growth of 2,5 percent per year for 8 years (2020 tot 2027) results in an increase of 10% for the first half of the period 2021-2027. This amount of ANM on grasslands is taken as the average amount to calculate the average cost of grassland-ANM for the period 2021-2027.

A second assumption is that the cost of overhead-activities – mainly the work of RVO and NVWA for the allocation of the subsidies for ANM and for the control system – will continue to be 19% as has been the case the last years (see page 40 of the WUR-rapport "Stelselvernieuwing in uitvoering").

The inflation in the coming years will probably lead to a rise of the average subsidy per ha of 427,- euro in 2019. This was not taken in account because it is considered impossible to predict the % in which the subsidy per ha will be adjusted the coming 7 years.

*Agricultural nature management of croplands (in table E-18, in section E.2.5 Other agro-ecosystems)*

The target value is based on the amount of cropland with agricultural nature management (ANM) in 2019, that is: 4.631 ha, see WUR-rapport for the Dutch parliament called "**Stelselvernieuwing in uitvoering**" dd 2021. Similar to the grassland ANM, it is assumed that the average amount of cropland ANM in the PAF-period 2021-2027 will be 10% higher than in 2019. 19% extra was taken into account for overhead, the same as for grassland ANM
Just as with grassland ANM no indexation was applied to account for rise of the average subsidy-tariff for cropland ANM.

*Agricultural nature management for small waterbodies (in table E-24, in section E.2.8 Freshwater ecosystems)*

The target value is based on the amount of land with agricultural nature management for small waterbodies in 2019, which is: 2.937 ha, see WUR-rapport for the Dutch parliament called "**Stelselvernieuwing in uitvoering**" dd 2021. Similar to the grassland and cropland ANM, it is assumed that the average amount of land with ANM for small waterbodies will be 10% higher than in 2019.
19% extra was taken into account for overhead, the same as for grassland ANMJust as with grassland and cropland ANM no indexation was applied that can account for a rise of the average subsidy-tariff for small waterbody ANM.

*Agricultural nature management for EU-protected species (in table E-27, in section E.3.2 Species specific measures)*

The target value is based on the amount of land with agricultural nature management for wet and dry "veins", in other words for the connectivity in agricultural landscapes in 2019, which is: 9.882 ha, see WUR-rapport for the Dutch parliament called "**Stelselvernieuwing in uitvoering**" dd 2021.
Similar to the grassland and cropland ANM it is assumed that the average amount of land with ANM for wet and dry "veins" or connectivity will be 10% higher than in 2019.
For overhead 19% extra was taken into account.
Just as with grassland and cropland ANM no indexation was applied to account for a rise of the average subsidy-tariff for this type of ANM.